

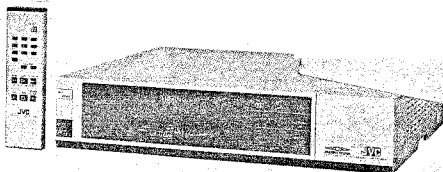
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER VHS

HR-D158MS

HQ
High Quality



Regarding parts and service information other than those sections, refer to the provided in HR-D157MS service manual (No. 8432). Also, be sure to note important safety precautions provided in the service manual.

SPECIFICATIONS

Format	: VHS standard	Horizontal resolution	: More than 250 lines (PAL), More than 240 lines (NTSC/SECAM) with picture sharpness control at centre position
Recording system	: Rotary, two-head helical scan system	Audio	
Video signal system	: PAL and SECAM colour and CCIR monochrome signal, 625 lines NTSC colour and EIA monochrome signal, 525 lines	Input	: AUDIO/VIDEO (21-pin): -3.8 dBs (CENELEC standard), more than 10 k-ohms unbalanced AUDIO (DIN 5-pin): -20 dBs more than 50 k-ohms unbalanced
Tape width	: 12.65 mm	Output level	: AUDIO/VIDEO (21-pin): -3.8 dBs (CENELEC standard), AUDIO (DIN 5-pin): -6 dBs, high impedance load
Tape speed	: 23.39 mm/sec (PAL/SECAM) 33.35 mm/sec (NTSC)	Output impedance	: Less than 1 k-ohm, unbalanced
Playing time	: 240 minutes with E-240 (PAL/SECAM)	Signal-to-noise ratio	: More than 40 dB
Temperature		Frequency range	: 70 Hz to 10,000 Hz
Operating	: 5°C to 40°C	Timer	: 14-day/4-programme timer
Storage	: -20°C to 60°C	Dimensions	: 435 mm(W) x 95 mm(H) x 376 mm(D)
Channel coverage	: VHF band I, 47 - 111 MHz VHF band III, 111 - 300 MHz UHF band IV/V, 470 - 862 MHz UHF channels 32 - 40 (Adjustable)	Weight	: 7.2 kg
Aerial output		Provided accessories	: Aerial cable, Video cassette tape, Infrared remote control unit, "R6" battery x 2
Power consumption	: 33 watts		
Power requirement	: 110 - 240 V~, 50/60 Hz		
Video			
Input	: 0.5 to 2.0 Vp-p, 75 ohms unbalanced		
Output	: 1.0 Vp-p, 75 ohms unbalanced		
Signal-to-noise ratio	: 43 dB (PAL/SECAM), 45 dB (NTSC), (Rohde & Schwarz noise meter) with picture sharpness control at centre position		

Design and specifications subject to change without notice.

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

- Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

- Parts identified by the  symbol and shaded  parts are critical for safety.

Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

- Use specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

- Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulation sheets for transistors

- When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

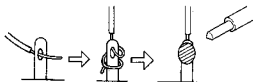


Fig. 1

- Observe that wires do not contact heat producing parts (heat-sinks, oxide metal film resistors, fusible resistors, etc.)

- Check that replaced wires do not contact sharp edged or pointed parts.

- When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

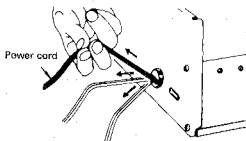


Fig. 2

- Also check areas surrounding repaired locations.

- Products using cathode ray tubes (CRTs)

In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

- Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

- 1) **Connector part number:** E03830-001

- 2) **Required tool:** Connector crimping tool of the proper type which will not damage insulated parts.

- 3) **Replacement procedure**

- (1) Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not reuse a connector (discard it).

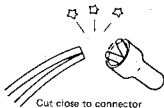


Fig. 3

- (2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

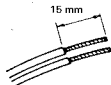


Fig. 4

- (3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

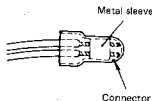


Fig. 5

- (4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

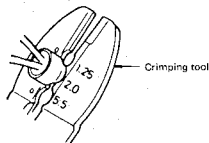


Fig. 6

- (5) Check the four points noted in Fig. 7.

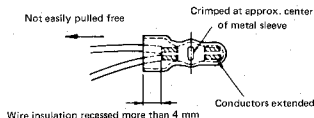


Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

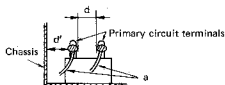


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

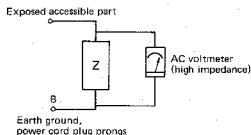


Fig. 9

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$\geq 1 \text{ m}\Omega/500 \text{ V DC}$	1 kV 1 minute	$\geq 3 \text{ mm}$
110 to 130 V	USA & Canada	—	900 V 1 minute	$\geq 3.2 \text{ mm}$
*110 to 130 V	Europe	$\geq 10 \text{ m}\Omega/500 \text{ V DC}$	4 kV 1 minute	$\geq 6 \text{ mm (d)}$
200 to 240 V	Australia			$\geq 8 \text{ mm (d') (a: Power cord)}$

* Class II model only.

Table 1 Ratings for selected areas

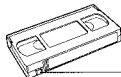
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (b) to:
100 V	Japan		$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada		$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	Europe		$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
220 to 240 V	Australia		$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current ratings for selected areas

Note: This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Handling and storage

- Avoid using the recorder under the following conditions:
 - extremely hot, cold or humid places,
 - dusty places,
 - near appliances generating strong magnetic fields,
 - places subject to vibrations, and
 - poorly ventilated places.
- Be careful of moisture condensation. Avoid using the recorder immediately after moving from a cold place to a warm place or soon after heating a room which was cold. The water vapour in warm air will condense on the still-cold video head drum and tape guides and may cause damage to the tape and the recorder.
- Handle the recorder carefully.
 - Do not block the ventilation openings.
 - Do not place anything heavy on the recorder.
 - Do not place anything which might spill and cause trouble on the top cover of the recorder.
 - Use in horizontal (flat) position only.
- In case of transportation,
 - Avoid violent shocks to the recorder during packing and transportation.
 - Before packing, be sure to remove the cassette from the recorder.



Safety tab

Video cassettes

- The recorder employs VHS-type cassettes only.
 - E-240 for 4 hours, E-180 for 3 hours, E-120 for 2 hours, E-80 for 1 hour and 30 minutes, E-60 for 1 hour and E-30 for 30 minutes of PAL or SECAM recording. T-160 for 2 hours and 40 minutes, T-120 for 2 hours, T-80 for 1 hour and T-30 for 30 minutes of NTSC recording.
- Video cassettes are equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording cannot be performed. If you wish to record on a cassette whose tab has already been removed, use adhesive tape to block the hole.
- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid extreme humidity, violent vibrations or shocks, strong magnetic fields (near a motor, transformer or magnet) and dusty places.
- Place the cassettes in cassette case and position vertically.

Moisture condensation

- If you pour a cold liquid into a glass, water vapour in the air will condense on the surface of the glass. This is called moisture condensation.
- Moisture condensation on the head drum, one of the most crucial parts of the recorder, will cause damage to the tape.
- Moisture in the air will condense on the recorder when you move the unit from a cold place to a warm place, after heating a cold room or under extreme humidity conditions.
- The recorder is equipped with a moisture condensation prevention circuit which automatically heats the head drum according to the ambient temperature. This circuit operates only when the unit is plugged into an AC outlet, the rear panel MAINS POWER switch is set to ON and the front panel OPERATE switch is off.
- The moisture condensation prevention circuit consumes only a slight amount of power. However, if for some reason you are not using the recorder for a long period of time, it is advisable to remove the power cord from the AC outlet or set the rear panel MAINS POWER switch to OFF.
- Since the moisture condensation prevention circuit cannot evaporate existing moisture condensation immediately after the power cord has been plugged into the AC outlet, you must allow for about 2 hours if the recorder is to be used in such areas as would occasion moisture condensation.

Operation

- As long as the MAINS POWER switch is set to ON, when a cassette is loaded, the power is switched on automatically.
- The cassette can be unloaded even when the power is off. Pressing the EJECT button turns the power on and, after ejection of the cassette, shuts it off automatically in this case.
- As long as the TIMER button is in the ON position the OPERATE and EJECT buttons have no effect and loading or unloading of a cassette is not possible. Do not force a cassette into the slot in this situation.

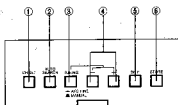
Remote control unit

- Avoid violent shocks, especially take care not to drop the unit.
- Take care not to allow liquid to spill into the unit.
- Do not place heavy objects on the unit, especially be careful not to step on it.
- Avoid leaving the unit in places subject to direct sunlight or extremely high temperatures.

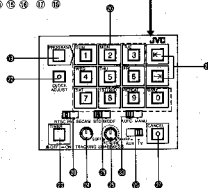
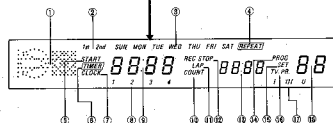
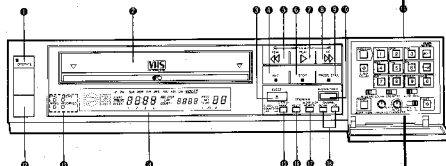
IMPORTANT: It is permissible to record television programmes only in the event that third party copyrights and other rights are not violated.

Keep this page opened so that you can refer to it at any time when you are reading this booklet.

Pre-tuning section



Front panel



Thank you for purchasing the JVC HR-D158MS Video Cassette Recorder. Before use, read this instruction booklet carefully for obtaining the best results from your new unit.

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SAFETY PRECAUTIONS

The rating plate and the safety caution are on the rear of the unit.

WARNING - DANGEROUS VOLTAGE INSIDE

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT (In the United Kingdom)
Mains Supply (240 V~, 50 Hz only)

IMPORTANT

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with the following code:

Blue to N (Neutral) or Black
Brown to L (Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt - consult a competent electrician.

Notes

We recommend that you should disconnect the AC cord from the outlet.

CAUTION

- Disconnect the mains plug from the supply socket when not in use.
- When you are not using the HR-D158MS for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or serial.



Only cassettes marked "VHS" can be used with this video cassette recorder.

FOR YOUR SAFETY (in Australia)
Install any external serial to AS 1417.1

MAINS POWER SWITCH

The mains switch is located on the rear connector panel. Setting this switch to OFF removes all applied power from the set including the timer clock. Switching on or off the recorder section is performed with the secondary power switch, labelled OPERATE, on the front panel.

This equipment has been produced to comply with Directive number 82/499/EEC.

FEATURES

Auto-power system
Inserting a cassette automatically turns the recorder on. Cassette ejection is possible with the power off.

Shuttle search for quick programme location
Approximately 9 times (PAL/SECAM), 7 times (NTSC) normal speed in either direction.

Voltage synthesizer wide-band dual tuner
Auto-scan tuning convenience with manual override and preset capacity of 8 SECAM L broadcasts and 24 PAL B/G broadcasts assure full access to available broadcasts.

Still playback and frame advance

Motorised front-loading system
The cassette loading slot is equipped with two separate door flaps, for easy identification of the presence of a cassette. Inside, a "cassette inserted" mark appears on the lower door flap when the cassette is inserted.

Instant recording facility
Simple, one-touch recording for a preselected period of time.

Sequential up/down tuning to preset stations

Counter search function

Large, multi-colour, comprehensive fluorescent display
As well as symbolic mode indicators, this display shows clock time, tape counter (switchable to stepped recording time counter), TV channel and programmed timer recording data.

14-Day/4-event programmable timer
Unique 10-key timer programming makes setting for unattended recording easy. Serial recording of regularly broadcast programmes is also possible.

Picture sharpness control
Sharper or softer pictures according to your preference.

Multi-system flexibility
Recording and playback are switchable to 5 systems: PAL, SECAM L, SECAM B/G, NTSC 3.58 and NTSC 4.43.

Infrared remote control with 10-key random-access channel selection

• Slim, super-low-profile design - 95 mm in height

• Auto rewind at tape end

• Automatic release mechanism
Protects tape by releasing Pause/Still mode after about 5 minutes.

• Connectors for CANAL PLUS decoder. (CANAL PLUS programmes are available only in France.)

• Backspace editing for smooth assembled recordings

• Brushless, quartz-locked, direct-drive drum motor
For greater reliability, plus independent capstan, tape loading and cassette loading motors.

• Automatic voltage switching to 110 - 240 V~, 50/60 Hz.

① OPERATE button with indicator

Press to apply power to the recorder. The indicator will light. Loading a cassette also turns the power on if the MAINS POWER switch on the rear panel is set to ON.

② Cassette loading slot

Insert a VHS video cassette. The door will close and the symbol showing that a cassette is inside will appear.

③ EJECT button

④ REC button

Press together with the PLAY button ⑤ for recording.

⑤ REW/SHUTTLE SEARCH button

To rewind the tape, press this button while in the Stop mode. To view the speeded-up picture in the reverse direction for programme search, hold this button pressed while in the Play mode.

⑥ STOP button

To stop the tape.

⑦ PLAY button

Press to play back the tape or cancel the Pause/Still mode. Also, press this button together with the REC button ④ for recording.

⑧ FF/SHUTTLE SEARCH button

To fast forward the tape, press this button while in the Stop mode. To view the speeded-up picture in the forward direction for programme search, hold this button pressed while in the Play mode.

⑨ PAUSE/STILL button

Press to stop the tape temporarily to avoid recording of unwanted material. When this button is pressed during playback, a still picture will appear. The still picture can be advanced in a frame-by-frame manner each time this button is pressed.

⑩ INSTANT REC button

Use this button to start recording instantly and stop automatically after a predetermined time. (See page 25.)

⑪ Built-in tuner pre-tuning section

Open the compartment cover on top of the unit.

⑫ Channel set button (CH SET)

Press this button for pre-tuning the built-in tuner to TV stations in your area. (See pages 15 and 16.)

⑬ Automatic tuning button (AUTO SEARCH)

Press this button to initiate automatic sweep tuning, which stops automatically when a broadcast signal is detected.

⑭ TUNING button

AFC FINE (—): To activate the built-in Automatic Frequency Control circuit. Also, in the AFC FINE position the two controls to the right function as fine tuning controls.

MANUAL (—): To use the two controls to the right as manual tuning controls.

⑮ Fine/Manual tuning buttons (—, +)

The function of these buttons differs depending on the setting of the TUNING button ⑭.

AFC FINE: To shift the AFC centre frequency for fine tuning; press “—” button to shift it in the direction of decreasing frequencies, and “+” in the direction of increasing frequencies.

MANUAL: To tune to weaker broadcast signals manually; press “—” button to shift the centre frequency to channels of lower frequencies, and “+” for those of higher frequencies. Sweep tuning is performed only while the button is being pressed.

⑯ SKIP button

To skip unused channels.

⑰ STORE button

To store the tuned-in station in memory.

⑱ Infrared beam receiving window

⑲ Colour system indicator

These four indicators show the selected system, according to the detected input signal (in the AUTO mode), or to the switch positions (in the MANU mode). For more details refer to “Important information on colour system selection” on pages 9 through 12.

⑳ Fluorescent display section

⑰ Symbolic mode indicator

Illuminates to give quick, easy visual reference of the operating mode. Combinations of 5 different symbols indicate 8 operating modes:

PLAY:		REWIND:	
STILL:		FAST FORWARD:	
RECORD:		REVERSE SHUTTLE SEARCH:	
RECORD PAUSE:		FORWARD SHUTTLE SEARCH:	

⑳ Week indicator

“1st” or “2nd” illuminates to show the week for making preset recordings. “1st” stands for the period within one week and “2nd” within the second week from setting.

㉑ Day indicator

Illuminates both for continuous day indication and for day presetting for future recordings.

㉒ REPEAT indicator

Shows that the entered data for timer recording will be retained for serial recordings. Can be turned on and off with the REPEAT button (REPEAT). Lights automatically when the DAILY button is pressed (numeric key [2]), but can be cancelled by pressing the REPEAT button.

㉓ START indicator

Illuminates for timer setting to designate the recording start time.

㉔ TIMER indicator

Illuminates when the TIMER button ㉔ is pressed to ON (—) to show that the recorder has been properly preset for timer recording.

㉕ CLOCK indicator

Always illuminates except in the Timer Set mode.

⑱ Programme number indicator
Numerals 1 through 4 illuminate successively each time the PROGRAM button ㉕ is pressed to show which programme is ready for entry.

㉖ Clock/Start time display

㉗ COUNT indicator

Illuminates to show that the digits in the display to the right are the counter reading.

㉘ LAP indicator

Illuminates to show that the digits in the display to the right are the reading for the elapsed recording time.

㉙ REC STOP indicator

Flashes or illuminates in the Instant Recording mode. Only STOP illuminates for timer setting to designate the recording stop time.

㉚ Stop time/Elapsed time/Counter display/Sweep indicator

㉛ Programme indicator (PROG)

Illuminates for channel setting in the Timer Set mode.

㉜ SET indicator

Illuminates when the CH SET button ⑫ or ⑬ in the top-panel pre-tuning section is pressed for pre-tuning and flashes during sweep scanning.

㉝ TV PR. indicator

Illuminates to show that the displayed channel is currently being received by the built-in tuner.

㉞ Band indicator

㉟ Channel display

Numerals 1 through 32 (channels 1 to 8 for SECAM broadcasts, 9 to 32 for PAL broadcasts) are successively displayed to show which channel is selected for recording, timer setting or for pre-tuning.

㊱ DISPLAY MODE select button

Press to change the display from the Timer Set mode to the Clock mode. Usually use this button to change the middle 4-digit display from tape counter (COUNT) to lap time display (LAP), or vice versa.

㊲ COUNTER RESET button

Press to reset the tape counter reading to “0000” and lap time reading to “00:00”.

㊳ COUNTER MEMORY button

When this button is pressed to ON (—), the tape will stop automatically at the reading of about “0000” in the Rewind or Fast Forward modes.

㊴ CHANNEL UP/DOWN buttons

Press either button to scan to a desired preset station. The selected channel will be indicated in the channel display.

㊵ PROGRAM button

Press this button when you want to preset the timer for unattended recording. The entire display will change to the Timer Set mode, with numeral 1 illuminated at the bottom of the display. This shows that programme memory No. 1 is ready to accept entries. To change the programme number, press this button until the number of the programme memory you want to use illuminates. After programme number 4, the display returns to the Clock mode.

㊶ Dual-purpose numeric keys

These 10 keys can be used to set the day, time and channel in the Timer Set mode, and the day and clock time in the Clock Set mode. (Can also be used for regular channel selection.)

“1” also functions as Sunday button (SUN).

“2” also functions as Monday button (MON).

“3” also functions as Tuesday button (TUE).

“4” also functions as Wednesday button (WED).

“5” also functions as Thursday button (THU).

“6” also functions as Friday button (FRI).

“7” also functions as Saturday button (SAT).

“8” also functions as “1st/2nd-week” button.

“9” also functions as “REPEAT” button.

“0” also functions as “DAILY” button.

For channel selection (in all modes), the “0” key functions as follows: Pressing once gives channel 10, twice, channel 20 and three times, channel 30. The zero in the units place blinks. If any other numeral key is pressed while the zero is blinking, channels 11 – 19, 21 – 29 and 31, 32 are obtained. (Numbers larger than 32 will be rejected.) To obtain channels 10, 20 and 30, allow for about 4 seconds after pressing the “0” button; blinking of the zero in the units place will stop and the corresponding channel will be set.

㊷ Cursor keys [←] [→]

Move the cursor back, and [→] advances the cursor. Use these keys to reach preprogrammed positions for correction. For more details, refer to pages 17 and 23.

㊸ CLOCK ADJUST button

To start or adjust the clock time, press this button and use the numeric keys. After time setting, press this button again to start timekeeping.

㊹ TIMER button

Press to ON (—) after you have preset the timer for unattended recording.

㊺ TRACKING control

Use this control to minimise noise bars, if observed during normal speed playback.

㊻ PICTURE SHARPNESS control

Turn this knob clockwise to make the picture sharper. Turn counterclockwise to give the picture a softer tone. Effective only for playback pictures. (No effect for recording.)

㊼ Input select switch (TV/AUX)

For selecting the recording input signal.

TV: To record signals coming from the built-in tuner.
AUX: To record signals coming from a unit connected to the rear panel AUDIO/VIDEO socket.

㊽ CANCEL button

To cancel or “clear” the programmed data, press this button in the Timer Set mode.

㊾ PAL/SECAM/NTSC switch

Use this switch to manually select the appropriate system only when the AUTO/MANU switch ㊿ is set to MANU. For more details refer to “Important information on colour system selection” on pages 9 through 12.

㊿ STD/MODF switch

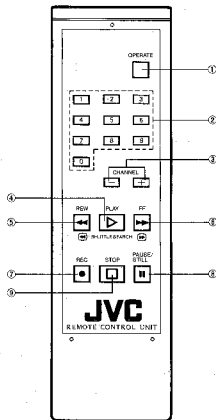
Set this switch to either STD or MODF when recording SECAM signals, depending on the type of tape desired. When playing back NTSC tapes, set this switch to either STD or MODF depending on the television system of the monitor being used. For more details refer to “Important information on colour system selection” on pages 9 through 12.

Ⓜ AUTO/MANU switch

This is a master switch for selecting the television system. First set this switch to either AUTO or MANU depending on the required mode. When the MANU mode is selected, set the other two system Select switches manually as required. For more details refer to “Important information on colour system selection” on pages 9 through 12.

Infrared remote control unit

The infrared remote control unit gives you full operation control from your viewing position. The maximum operating distance is about 8 m.



① OPERATE button

To switch power on or off for the recorder.

② Numeric keys

Key in the channel you wish to record.

To key in a two-digit channel number, press "0" once for 10, twice for 20 and three times for 30. Example: To call up channel 16, first press "0" and then "16". "16" will be displayed in the channel display section of the recorder's fluorescent display.

To call up channel 10, 20 or 30, press "0" the number of times required and wait until the zero in the units place stops blinking.

③ CHANNEL scan buttons (+, -)

Use these buttons for sequential channel selection.

④ PLAY button

⑤ REW/SHUTTLE SEARCH button

⑥ FF/SHUTTLE SEARCH button

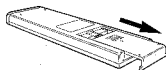
⑦ REC button

⑧ PAUSE/STILL button

⑨ STOP button

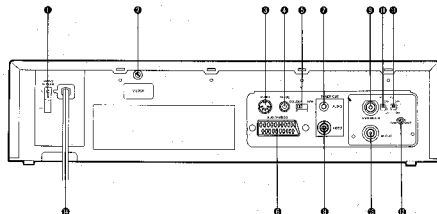
Installing the batteries

1. Slide the battery compartment cover on the rear of the unit in the direction of the arrow (▶).



2. Insert 2 "R6"-size batteries (provided) in the correct directions into the battery compartment.
3. Replace the cover.

Rear Panel



① MAINS POWER switch

Setting this switch to ON applies mains power to the set. To switch off the set completely, set the MAINS POWER switch to OFF. This switches off the timer/lock circuit and cancels all the preset programming data after the memory backup time (about 60 minutes) has elapsed. This also switches off the built-in aerial circuit so that the TV receiver connected to the recorder will not be able to receive off-the-air TV programmes for good viewing condition. Normally set this MAINS POWER switch to ON.

② V-LOCK adjustment screw

When operating in the Still mode, adjust this screw to eliminate any vertical vibration of the picture. (For any inquiry about this adjustment, contact a JVC Service Dealer.)

③ AUDIO input/output DIN socket

Connect a tape recorder or other audio sources or connect the audio output of other video sources for recordings. Also, audio signals being recorded or played back are available from the output terminals of this DIN socket.

④ Pause remote control terminal

When using a JVC video camera, connect the remote control cable of the camera adapter to this terminal for the purpose of controlling the starting and stepping of the tape with the camera's start/stop switch.

⑤ Video mode select switch

This applies to both recording and playback.
COLOUR: Set to this position when the input or playback video signal is in colour.

B/W: Set to this position when the input or playback video signal is monochrome.

⑥ AUDIO/VIDEO socket

A 21 pin standardised audio/video input/output socket for the connection to a stereo TV equipped with the same type of socket.

⑦ Tuner audio output connector

The audio signal received by the built-in tuner is available from this connector regardless of the setting of the TV/AUX ⑧ switch as long as the operating power is on. To record CANAL PLUS programmes (available only in France), connect the audio input of the CANAL PLUS decoder to this connector.

⑧ Tuner video output connector

The video signal received by the built-in tuner is available from this connector regardless of the setting of the TV/AUX ⑧ switch as long as the operating power is on. To record CANAL PLUS programmes (available only in France), connect the video input of the CANAL PLUS decoder to this connector.

⑨ Aerial input connector (ANTENNA IN)

Connect an aerial to this connector.

⑩ Attenuator switch (ATT)

Set to OFF to receive broadcasts from distant stations. Set to ON to receive broadcasts of high field strength. Use a screwdriver for setting this switch.

⑪ Test signal switch (T.S.)

Set to ON when tuning your TV receiver for the VIDEO CHANNEL A test signal in the form of two vertical white bars will be available.

⑫ RF converter frequency adjustment screw

See page 14.

⑬ RF OUT connector

Connect to the aerial connector of a TV receiver through the aerial cable (provided).

⑭ Power cord

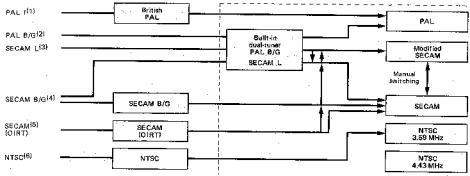
IMPORTANT INFORMATION ON COLOUR SYSTEM SELECTION

The HR-D168MS incorporates the circuitry necessary to record or play back the PAL, SECAM or NTSC signals from any television broadcasting system in the world. To select the right colour system, there are three switches on the HR-D168MS: AUTO/MANU master switch, SECAM/PAL/NTSC switch and STD/MODF switch. Generally, when the master switch is set

to AUTO, the appropriate system is selected according to the input signal. However, some situations require manual switching. (The circuit in operation is indicated by the 4 colour system indicators.) Please read carefully the following information to ensure correct recording and playback.

Off-air recording

TV system



Off-air recording

As illustrated above, the HR-D168MS incorporates 5 different recording circuits to process PAL, modified SECAM, SECAM, NTSC 3.58 and NTSC 4.43 signals, enabling broadcasts in any country to be recorded. However, its built-in tuner is for receiving PAL B/G and SECAM L broadcasts; to record off the air in countries where television systems other than the PAL B/G and SECAM L are employed, it is necessary to connect a tuner (or monitor-receiver) of the corresponding standard.

(1) PAL broadcasts

PAL B/G is the colour television broadcasting system frequently identified as the British PAL system and used in England, Ireland and some African countries. To record off the air in these countries, a tuner (or monitor-receiver) built to the British PAL system is necessary. The setting of the system select switches is identical to that for PAL B/G.

(2) PAL B/G broadcasts

PAL B/G is the colour television broadcasting system used in most Continental European countries (except France, Luxembourg and Monaco) and some countries of the Middle East, Africa and Asia. The built-in tuner can be used to record off the air in these countries. Simply set the master system select switch to AUTO. Use the tuner channels 9 through 32.

(3) SECAM L broadcasts

SECAM L is the colour television broadcasting system usually identified as the French SECAM system and is employed in France and a few other countries. TV broadcasts of these countries can be recorded with the built-in tuner using the tuner channels 1 through 8. The STD/MODF switch must be set manually depending on which type of tape is to be made, even when the master system select switch is set to AUTO.

(4) SECAM B/G broadcasts

SECAM B/G is the colour television broadcasting system employed in many countries of the Middle East and Africa and a few Eastern European countries including East Germany. Although SECAM B/G broadcasts can be recorded through a separate tuner (or monitor-receiver) built to this standard, the HR-D168MS's built-in tuner functions sufficiently to receive these broadcasts. Depending on the setting of the STD/MODF switch, either a SECAM or modified SECAM tape can be made. Set this switch manually to the appropriate position even when the master system select switch is set to AUTO.

(5) SECAM (D/RT) broadcasts

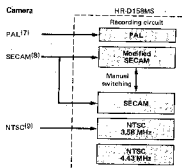
The SECAM (D/RT) system is the colour television system of the majority of Eastern European countries and a few other countries such as Tahiti and Ivory Coast. To record off the air in these countries, a tuner (or monitor-receiver) of the corresponding standard is necessary. Both modified SECAM and SECAM circuits are involved; select the appropriate position of the STD/MODF switch, even when the master system select switch is set to AUTO.

(6) NTSC broadcasts

NTSC is the colour television broadcasting system used in the USA, Canada, Japan, several Latin American countries and a few Asian countries. To record off the air in these countries, a tuner (or monitor-receiver) of the NTSC standard is necessary. The broadcast NTSC signal has a subcarrier frequency of 3.58 MHz. Therefore, in the AUTO mode, the NTSC 3.58 MHz circuit is automatically selected.

For further information, consult your nearest JVC dealer.

Camera recording



Camera recording

Video cameras are built to one of the three standards: PAL, SECAM or NTSC, and deliver different signals depending on the standard. To produce tapes with normally recorded signals, use the AUTO mode or set the system select switch correctly. For instance, it is impossible to produce NTSC tapes with a PAL camera by manually selecting the NTSC circuit.

(7) PAL cameras

Setting the master switch to AUTO is sufficient in most cases.

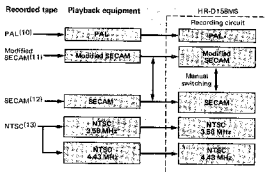
(8) SECAM cameras

Either SECAM or modified SECAM tapes can be produced, depending on the position of the switches.

(9) NTSC cameras

Engaging the AUTO mode automatically selects the NTSC 3.58 MHz circuit.

Tape-to-tape transfer



Tape-to-tape transfer

There are 4 different types of recorded tape, depending on the signal recorded.

(10) PAL tapes

To transfer PAL tapes, a second recorder built to the PAL standard is required to play them. Switch positions are identical to those for recording PAL broadcasts and from a PAL camera.

(11) Modified SECAM tapes

Use playback equipment which is capable of processing modified SECAM signals. Depending on what type of tape is desired, either the modified SECAM or SECAM circuit of the HR-D168MS can be used. Set the STD/MODF switch manually as required.

(12) SECAM tapes

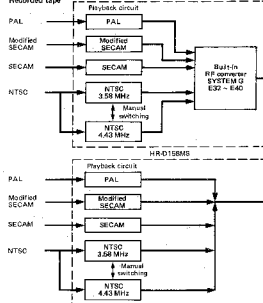
Use playback equipment which is capable of handling SECAM signals. Depending on what type of tape is desired, either the modified SECAM or SECAM circuit of the HR-D168MS can be used. Set the STD/MODF switch manually as required.

(13) NTSC tapes

If the playback equipment is built to the NTSC 3.58 MHz standard, the NTSC 3.58 MHz circuit is automatically selected in the AUTO mode. Likewise, if the playback equipment is built to the NTSC 4.43 MHz standard, the NTSC 4.43 MHz circuit is automatically selected in the AUTO mode.

Playback

Recorded tape



Playback

The chart for playback and monitoring is separate from the chart for recording. As mentioned above, there are 4 different types of recorded tape. To view video tapes, you may use a TV receiver, or a monitor-receiver or a video monitor. It is assumed that the purchaser of the HR-D158MS owns a multi-system television set, one of those suggested in the chart.

(14) Multi-system receiver

Since the built-in RF converter is built to the G system, all tapes can be seen by setting the television's system select switch to G/B and tuning to the RF converter's output channel (E32 - E40 adjustable). If your television set has also an NTSC signal processing circuit, NTSC tapes, too, can be seen through the built-in RF converter.

(15) Multi-system monitor

All tapes can be seen with either a triple-system or a four-system monitor having PAL, SECAM and NTSC circuits.

CAUTION

- When the HR-D158MS is connected to a multi-system television set, it may happen that no colours appear on the screen if the colour system select switch of the television set is adjusted to the AUTO position. In such a case, change the setting of the colour system select switch of the television set to an appropriate position.
- While playing back tapes which contain recordings of different colour systems with the AUTO/MANU switch set to AUTO, the screen may briefly become monochrome at the switching point of the colour system. This is because a few seconds are required for the recorder to detect and adjust to a different colour system. This is normal and is not due to any defect of this unit.

System select switches and indicators

(Refer to the chart on the next page.)

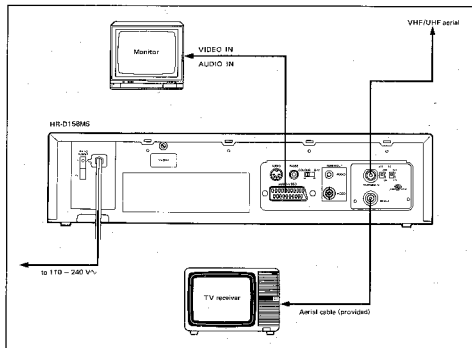
- When the master switch is set to AUTO, the HR-D158MS reads the input signal (or taped signal during playback) and automatically activates the necessary circuit. For modified SECAM or SECAM only, set the STD/MODF switch as required for recording. For playback of NTSC tapes, select the correct position of the STD/MODF switch, depending on the system of the monitor used.
- In the AUTO mode, the indicator corresponding to the automatically selected system lights.
- When the master switch is set to MANU, the selected circuit is activated regardless of the input signal. The indicator shows the switch positions.
- While recording in the AUTO mode, if the input signal is unstable, substandard or interrupted, the lighted indicator starts flashing.
- If there is no input signal at the initial stage of recording and the system corresponding to the switch positions is activated, causing the corresponding indicator to flash.
- NTSC tapes recorded in the LP (Long Play) or EP (Extended Play) mode and PAL/SECAM tapes recorded in the LP mode cannot be played back on this unit. If playback is attempted with such a tape in the AUTO mode, the corresponding indicator will flash.
- In the MANU mode, no indicator flashes in any situation. Playback picture is the reference.
- With a B/W signal input, or when a B/W tape is played back in the AUTO mode, the PAL indicator will light with CCIR signals and the NTSC indicator will light with EIA signals (the MODIFIED indicator will also light when the STD/MODF switch is set to MODF during playback of EIA monochrome taped).

System select switch positions & Indicators

Use	Source	System select switches				Indicators	Remarks
		AUTO mode	MANUAL mode	AUTO mode	MANUAL mode		
Off-air recording	PAL	*	*	*	*	PAL SECAM NTSC MODIFIED	
	SECAM	MODF	*	MODF	SECAM	PAL SECAM NTSC MODIFIED	To produce modified SECAM tapes
	NTSC	STD	*	STD	SECAM	PAL SECAM NTSC MODIFIED	To produce SECAM tapes
Camera recording	PAL	*	*	*	*	PAL SECAM NTSC MODIFIED	
	SECAM	MODF	*	MODF	SECAM	PAL SECAM NTSC MODIFIED	To produce modified SECAM tapes
	NTSC	STD	*	STD	SECAM	PAL SECAM NTSC MODIFIED	To produce SECAM tapes
Tape-to-tape transfer	PAL	*	*	*	*	PAL SECAM NTSC MODIFIED	
	Modified SECAM/SECAM	MODF	*	MODF	SECAM	PAL SECAM NTSC MODIFIED	To produce modified SECAM tapes
	NTSC (played on NTSC 3.58 MHz machine)	STD	*	STD	SECAM	PAL SECAM NTSC MODIFIED	To produce SECAM tapes
Playback	NTSC (played on NTSC 4.43 MHz machine)	*	*	MODF	NTSC	PAL SECAM NTSC MODIFIED	
	PAL	*	*	*	*	PAL SECAM NTSC MODIFIED	
	Modified SECAM	*	*	MODF	SECAM	PAL SECAM NTSC MODIFIED	
Tape-to-tape transfer	SECAM	*	*	STD	SECAM	PAL SECAM NTSC MODIFIED	
	NTSC (to be viewed on 3.58 MHz monitor)	STD	*	STD	NTSC	PAL SECAM NTSC MODIFIED	
Tape-to-tape transfer	NTSC (to be viewed on 4.43 MHz monitor)	MODF	*	MODF	NTSC	PAL SECAM NTSC MODIFIED	

*The position of a switch so marked is irrelevant.

CONNECTIONS



1. Remove the aerial cable from your TV receiver and reconnect it to the HR-D158MS as illustrated. The HR-D158MS is then ready to record off-air TV programmes.
2. Connect the HR-D158MS to the TV receiver using the aerial cable provided. The TV receiver is then ready to receive TV broadcast programmes as well as video cassette programmes from the HR-D158MS.
3. When you use a video monitor for playback, connect the AUDIO/VIDEO socket of the HR-D158MS to the VIDEO IN and AUDIO IN connector of the video monitor.

Note:

Even when you are not using the HR-D158MS, the rear panel MAINS POWER switch should be set to ON in order to be able to view TV broadcast programmes with this connection.

VIDEO CHANNEL SETTING

The built-in RF converter permits playback of video and audio recordings through a TV receiver. The signals from the RF converter are viewed through a vacant channel not used for broadcasting in your viewing area. The converter channel of all units is set to UHF channel 36 prior to shipment. Setting your TV receiver to UHF channel 36 may provide video playback. However, to obtain the best possible reproduction on your TV receiver, accurate adjustment to the RF converter output is required.

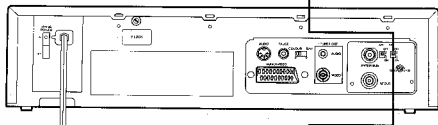
Procedure

1. Press the front panel OPERATE button to turn the indicator on. Turn on the TV receiver.



2. Adjust your TV receiver in the vicinity of UHF channel 36 until you bring in the two white signal bars on the screen as illustrated. This setting is now the VIDEO CHANNEL of the TV receiver to which the HR-D158MS is connected.

3. Reset the T.S. switch to OFF.



4. Set the T.S. switch, located on the rear panel, to ON.

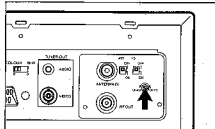
Notes:

- When you adjust your TV receiver to channel 36 for video playback, if some interference noise is seen on the screen because of broadcasts on neighbouring channels or if your preset broadcasts should be affected in picture quality, it is necessary to shift the RF converter output frequency from that of channel 36.

For this purpose, insert a screwdriver into a hole provided on the rear of the set and re-adjust the RF converter frequency adjustment screw in minute steps. Then tune the TV receiver once again until a clear picture is obtained. This adjustment requires extreme precision and must be done with the utmost care. We recommend that you consult your JVC dealer for making this adjustment.

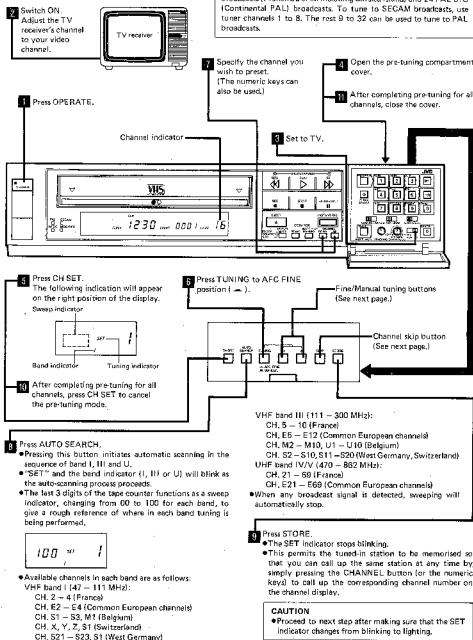
- Be sure to set the T.S. switch to OFF after VIDEO CHANNEL tuning has been completed.
- No signal is available from the AUDIO/VIDEO socket while the test signal is being used.

- If a prerecorded VHS cassette is available, TV adjustment for VIDEO CHANNEL setting is also possible using it to obtain a playback picture. Insert the cassette and operate the HR-D158MS for playing back the cassette. Then tune the TV receiver to obtain clear pictures and sound while monitoring the playback picture on the TV screen.
- If your TV receiver is not provided with an AFC circuit, perform fine tuning of the TV receiver when you are actually viewing video cassettes.



PRE-TUNING THE BUILT-IN TUNER

The built-in tuner conforms to the SECAM L and PAL B/G systems, having a capacity of receiving 32 different channels; 8 SECAM L broadcasts (French SECAM including Corsica island) and 24 PAL B/G (Continental PAL) broadcasts. To tune to SECAM broadcasts, use tuner channels 1 to 8. The rest 9 to 32 can be used to tune to PAL broadcasts.



IMPORTANT INFORMATION ON PRE-TUNING

Additional information on the tuning procedure

- If no command is given for about 60 seconds after the CH SET button has been pressed, the channel display will return to the original with the TV PR indicator illuminated.
- When specifying the channel you wish to preset, the CHANNEL button can be pressed either repeatedly for changing the number in a single increment or continuously held for rapid automatic changing.
- When sweeping stops in step 8, check to see if the received broadcast is your desired one or not.
- After tuning in step 8, be sure to press the STORE button, otherwise the tuned-in condition will be lost.
- After step 8, change the channel number and repeat steps 8 and 9 to preset all necessary channels.

Fine tuning

- When the TUNING button is in the AFC FINE position, the AFC circuit is in operation. Normally leave this button in the AFC FINE position. If, however, the picture quality is unsatisfactory due to ghosts or other noise, perform fine tuning after step 8.
- For this purpose, press either the - or + button so that the picture clears up. Each time either button is pressed, the picture condition changes in a single increment (continuous changing is not possible). 8 increments with the "-" button and 7 increments with the "+" button.
- If the picture is not clear after all procedures, perform fine tuning on your television.
- Distorted pictures or sound will be recorded if fine tuning has not been properly performed. Exercise care with this adjustment since the recorded picture and sound cannot be adjusted later.

Manual tuning

- With automatic tuning, only those stations which have a signal strength exceeding a certain level can be captured.
- To capture signals not strong enough for automatic tuning, employ manual tuning. (It is recommended that the ATT switch be set to OFF.)
- For this purpose, press the TUNING button to MANUAL ().
- Then press either the - or + button depending on the search direction. Sweep tuning is performed only while the button is being pressed.
- When you capture a desired station, press the STORE button in the same manner as for automatic tuning, and the tuned-in station will be memorised.
- If the "-" or "+" button is pressed during auto-tuning, sweeping stops regardless of the position of the TUNING button.

Skipping unused channels

Though 32 channels are available for presetting to desired TV channels, you may not need all 32 channels. In such cases, unused channels can be skipped so that only preset channels will be called up. For this purpose, proceed as follows:

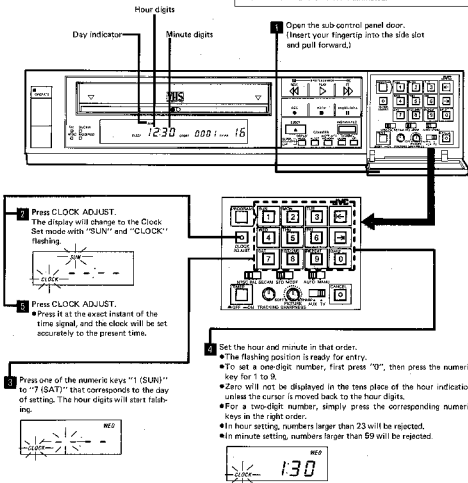
- 1) Press the CH SET button.
- 2) Call up the channel number that you wish to skip.
- 3) Press the SKIP button.
 - This completes the procedure for skipping the corresponding channel number.
- 4) Call up another channel number that you wish to skip and repeat the same procedure above.
- 5) Press the CH SET button to disengage this mode.

Notes:

- After this mode is disengaged, those skipped channel numbers will not appear on the channel display any more in modes other than Channel Set. (Using the numeric keys, it is possible to call up the skipped channels.)
- In the Channel Set mode, all channel numbers including skipped ones are successively displayed when the CHANNEL buttons are pressed.
- It is possible to restore the skipped channels for presetting to another TV channel whenever necessary. For this purpose, call up the corresponding channel number in the Channel Set mode and perform pre-tuning. Press the STORE button. Then, the new TV station channel is memorised to be called up at any time.

CLOCK SETTING

Plug the HR-D 158MS into an AC outlet and set the rear panel MAINS POWER switch to ON. The display shows a flashing 0.00 with SUN and CLOCK illuminated.



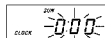
Notes:

- If you press a wrong numeric key, you can return to the previous position using the reverse cursor key [←].
- Once all necessary data have been entered, you can reach any position for correction using the reverse and forward cursor keys [←] [→].
- Clock setting is not possible if the TIMER button is in the ON (▲) position. First check to see that it is in the OFF (■) position.

Power-failure indicator

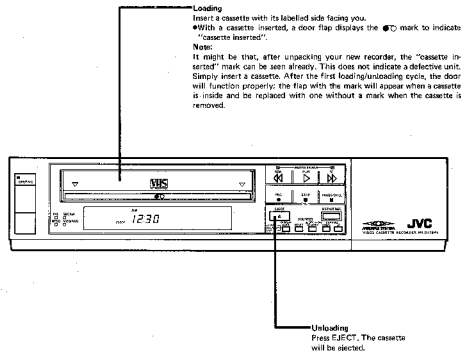
The clock display may reset to 0:00 and start to flicker fast. This is not a malfunctioning of the clock, but it indicates that

there has been a power failure in excess of one hour. Re-adjust the time restores the normal condition of the clock display.



- If the period of power outage is within about 80 minutes, correct time-keeping continues when power is restored.
- During this 80-minute period, the built-in memory back-up capacitor maintains time-keeping and preset timer memory, though the display blacks out.

LOADING AND UNLOADING A CASSETTE



New motorized loading system

- The cassette can be loaded even when the power has not been turned on. Inserting a cassette into the loading slot turns the power on automatically.
- The cassette can be unloaded even when the power has been turned off. If a cassette is inside, pressing the EJECT button turns the power on automatically and, after ejection of the cassette, shuts it off automatically.

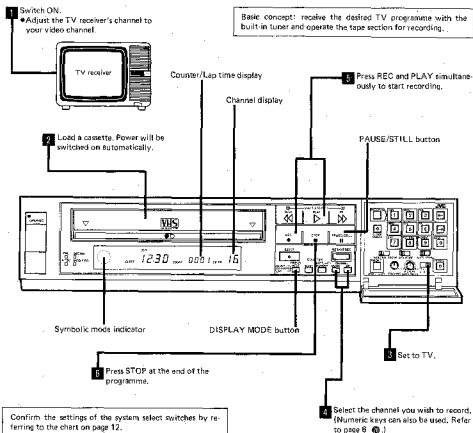
Notes:

- Be sure to insert the cassette firmly into the slot; otherwise, it will be automatically ejected.
- The automatic loading mechanism will operate only when the cassette is inserted correctly.
- A cassette inserted incorrectly will not be loaded.

Caution

- If loading or unloading of a cassette is not possible, check to see whether the TIMER button is in the ON position. If so, press it to the OFF (■) position.
- Do not attempt to pull out the cassette once automatic loading has started.
- Do not insert fingers or any foreign object beyond the door flaps of the cassette loading slot, as this could lead to injury or damage to the mechanism. Show special caution with children.

RECORDING A TV PROGRAMME WHILE WATCHING IT



Notes:

- If there is part of the programme you don't want to record, press the PAUSE/STILL button. To release the Pause mode, press the PLAY button.
- If the REC button cannot be engaged, check to see if the cassette safety tab has been removed. See page 3.
- When the end of the tape is reached during recording, the tape is automatically rewound to the beginning and stops.
- Press the DISPLAY MODE button once to check how much recording time has elapsed. (For more details refer to page 22.)
- When recording is restarted from the Pause mode, assemble recording is performed so that the playback picture will not distort at the edit point. A few frames recorded before the pause are erased due to overlap of the new recording. This is not due to any defect of the unit.

- When the Pause mode continues for longer than about 5 minutes, the Stop mode will be entered automatically.
- The built-in tuner's automatic channel lock mechanism prevents the selected channel from being altered during recording. Therefore, if you wish to change the channel during recording, first engage the Pause mode and then select a different channel.

RECORDING A TV PROGRAMME WHILE WATCHING ANOTHER

A programme not being viewed can be recorded while you enjoy another programme. This permits the recorded programme to be played back later at your convenience. The recording procedure is exactly the same as described on the previous page. The points to be remembered are:

- Select the channel you wish to record with the recorder's channel selector.
- Select the channel you wish to view with the TV receiver's channel selector.

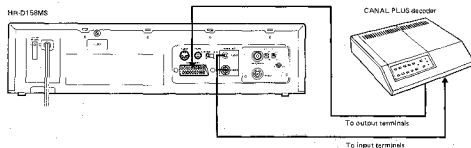
RECORDING CANAL PLUS PROGRAMMES

The HR-D158MS is equipped for recording of CANAL PLUS programmes. For this purpose, the TUNER OUT (VIDEO, AUDIO) connectors on the rear panel deliver the video and audio signals received by the built-in tuner.

Note: CANAL PLUS programmes are available only in France.

Connections

HR-D158MS



- Connect the recorder's TUNER OUT connectors to the input terminals of the decoder and the decoder's output terminals to the AUDIO/VIDEO socket of the recorder.

Operation

- The only difference from the basic recording process is in step 2. Set the AUX/TV switch to AUX.

Notes:

- You can simply watch the CANAL PLUS programmes with this setup without recording. In this case, it is necessary to turn the recorder's power on by pressing the OPERATE button.
- For more details on this system, consult your JVC dealer.

FOR A BETTER UNDERSTANDING OF THE PROGRAMMABLE TIMER

Two-week timer

"Two-week" presetting capacity means that you can "reserve" recordings on any one of 14 days in advance including the day of setting.

If the current day of setting is Wednesday:

1st week						
SUN	MON	TUE	WED	THU	FRI	SAT
2nd week						
SUN	MON	TUE	WED	THU	FRI	SAT
3rd week						
SUN						

- In this situation, there may be no possibility of confusion in setting the day.
- Namely, the "1st MON" is Monday of the current week and the "2nd MON" is Monday of the next week. The same applies to other week days.
- Regarding Sunday, there are two different cases: one is that you are going to set the timer to a time before the current time of setting and the other is that the preset time is a time after the current time of setting.
- In the former case, the "1st SUN" is the next Sunday and the "2nd SUN" is the Sunday after next.
- In the latter case, the "1st SUN" is the current Sunday and the "2nd SUN" is Sunday of the next week.

4-programme timer

"4-programme" presetting capacity means that you can have 4 separate programme entries which contain different programming data. Because of this capacity, you can even "reserve" 4 different TV programmes, either on the same day or on different days. Each programme (No. 1 through No. 4) entry contains information on "TV channel number", "day", "start time", "stop time" and "either single or repeat".

Example of the contents of one programme entry:

Programme number	TV channel number	Day	Start time	Stop time	Re. past
2	12	1st WED	10:30	11:30	—

If the current day of setting is Wednesday:

1st week						
SUN	MON	TUE	WED	THU	FRI	SAT
2nd week						
SUN	MON	TUE	WED	THU	FRI	SAT
3rd week						
SUN	MON	TUE	WED			

- Remember that the "1st MON", "1st TUE" and so on . . . mean the first coming Monday, the first coming Tuesday, and so on, and not Monday of the current week.
- Similarly, the "2nd MON", "2nd TUE" and so on . . . are the second coming Monday, the second coming Tuesday, and so on, and not Monday or Tuesday of the next week.
- If you are on Wednesday for example, and wish to record something on Tuesday of the next week, the preset data should be "1st TUE". To record on Thursday of the next week, set "2nd THU".
- Regarding Wednesday, the same as mentioned about Sunday on the left applies.

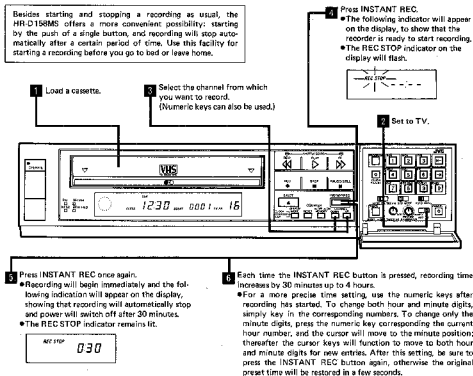
Variety of setting possibilities

Setting	Indication
One day of the 1st week	1st + Day
One day of the 2nd week	2nd + Day
One day of every week starting from the 1st week	1st + Day + REPEAT
One day of every week starting from the 2nd week	2nd + Day + REPEAT
Daily serial recording week after week starting from the 1st week	All days + REPEAT ¹⁾
Daily serial recording for one week starting from the 1st week	All days ²⁾

- When the DAILY () key is pressed, the REPEAT indicator will light automatically.
- After pressing the DAILY () key, press the REPEAT () key to cancel the REPEAT indicator.

INSTANT RECORDING

Besides starting and stopping a recording as usual, the HR-D158MS offers a more convenient possibility: starting by the push of a single button, and recording will stop automatically after a certain period of time. Use this facility for starting a recording before you go to bed or leave home.

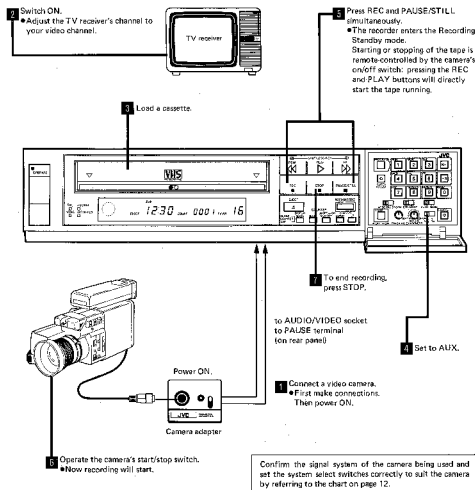


Confirm the settings of the system select switches by referring to the chart on page 12.

Notes:

- If the INSTANT REC button is not pressed a second time within about 10 seconds after it has been pressed once, the Instant Record mode will be cancelled and the display will change back to the Counter mode.
- If you want to change the time setting again after the INSTANT REC button has been pressed for memorization of new data, simply press INSTANT REC and redo the programming.
- While recording is in progress, the displayed time counts down; when 0:00 is reached, the Record mode is released after 10 seconds and the power is switched off.
- If you want to stop recording after having started recording in the Instant Record mode, press the STOP button.
- The instant recording function can also be used as a sleep timer. If you press the INSTANT REC button during normal recording, the REC STOP indicator will light on the display and the indication "0:30" will be obtained, showing that recording will stop automatically after 30 minutes. The time span can be adjusted in the same way as for instant recording.
- Instant recording has priority over all other modes; you can start recording from any mode using the INSTANT REC button, even from rewinding or fast forward, or from power off (as long as the MAINS POWER switch is set to ON).
- If the INSTANT REC button is pressed with a non-recordable cassette loaded (one with its safety tab removed), the cassette will be automatically ejected.
- If you want to perform instant recording after you have set the timer and pressed the TIMER button to ON, press the INSTANT REC button as usual. Power will be turned on and instant recording will start. After instant recording has been performed, the Timer mode is automatically re-entered and power is turned off. The preset time for instant recording has priority over the programmed preset times. Before pressing the INSTANT REC button, make sure that the instant recording time will not eventually overlap the programmed preset times.
- If the programmed switch-on time for a timer recording should come after the switch-off time of the instant recording, this timer recording will still be made automatically.

RECORDING WITH A VIDEO CAMERA



Notes:

- If feedback noise (whistling or howling) is heard from the TV receiver, reduce the volume or move the microphone, being used, farther away from the TV receiver.
- For camera operation refer to the instruction manual for the relevant camera.

IN CASE OF DIFFICULTY

What may initially appear to be trouble is not always a real problem. Make sure first . . .

Symptoms	Check points
No power is applied to the HR-D15MB.	• Is the power cord disconnected? Connect it. • Is the rear panel MAINS POWER switch set to OFF? Set to ON.
Playback picture does not appear while the tape is running.	• Is the TV receiver's channel selector set to an occupied channel? Set to the RF converter channel.
Tape does not run in the Record mode.	• Is the PAUSE/STILL button pressed? Press PLAY to release.
REC button cannot be engaged.	• Is the cassette improperly loaded? Load it properly. • Is the safety tab broken? Repair the slot.
Tape stops in the Rewind or Fast Forward mode.	• Is the COUNTER MEMORY button set to ON? Set to OFF.
Tape will not rewind.	• Is the tape already rewound to the end?
TV broadcasts cannot be recorded.	• Is the TV/AUX switch set to AUX? Set to TV.
Noisy playback picture.	• Adjust with the TRACKING control.
Pressing PAUSE/STILL during still playback brings a still picture (in a frame-by-frame mode) with noise bars.	• Return the control to its centre position after playing back the particular tape. • Noise bars can be eliminated by pressing the PAUSE/STILL button a few more times.

This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and check the functions.

HEAD CLEANING

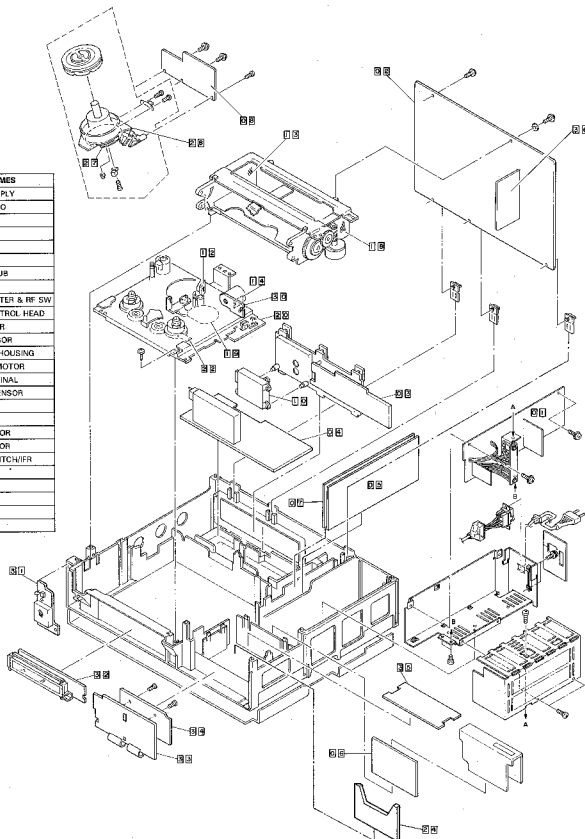
- Picture playback may become blurred or interrupted while the TV programme received is clear. This does not mean that the recorded programme has been erased.
- Dirt accumulated on the video heads after long periods of use causes such problems. In this case, head cleaning requiring highly technical care is necessary.

For head cleaning, consult the nearest JVC Dealer.

SECTION 4 CHARTS AND DIAGRAMS

4.1 CIRCUIT BOARD LOCATIONS

No.	NAMES
011	POWER SUPPLY
012	VIDEO/AUDIO
013	TERMINAL
014	TUNER/IF
015	MECHACON
016	AUDIO
017	TUNER/IF SUB
018	HEAD/MDA
019	RF CONVERTER & RF SW
020	AUDIO/CONTROL HEAD
021	END SENSOR
022	MODE SENSOR
023	CASSETTE HOUSING
024	CAPSTAN MOTOR
025	DECK TERMINAL
026	TAKE UP SENSOR
027	VIDEO SUB
028	DRUM FG
029	DRUM MOTOR
030	MODE MOTOR
031	POWER SWITCH/IFR
032	DISPLAY
033	OPERATION
034	TIMER
035	PRESETTER
036	NTSC



High Quality Circuit Outline.

HQ (High Quality) technology is included in the HR-D158MS in order to improve pulse response. This mainly involves the following two circuits.

- 1) White Clip
Maximum white clip level is 190%. This provides distinct picture edges and high image clarity.
- 2) Detail Enhancer
Small amplitude video signals, which are easily lost in play-back, are enhanced at the time of recording, thereby improving picture detail during play-back.

The basic block diagram of the detail enhancer is shown in Fig. 1. This circuit is included in the luminance signal recording system.

The equalizing amplifier corrects for time axis delay of the compensating signal produced by the highpass filter with respect to the original signal.

The highpass filter samples the edge component of the original signal, while the limiter samples only the low level edge component.

The low level edge component is added at ADD (1) in order to enhance the low level video signal.

Specified response of this circuit is as follows.

Enhancement Ratio	Less than 8 dB
Enhancement Volume	Less than 10 IRE
Operating Frequency	Above 1 MHz

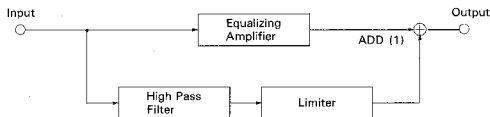
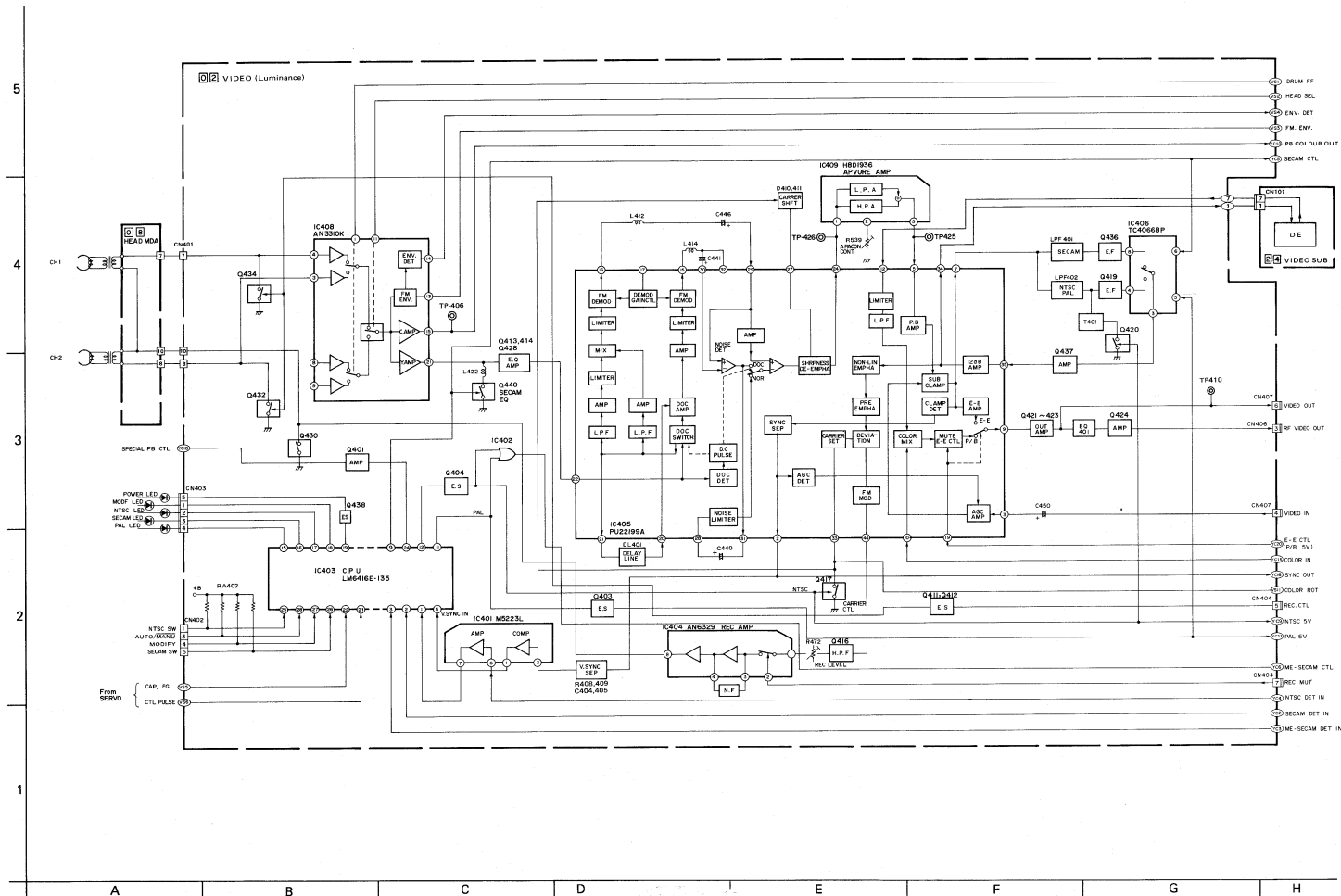
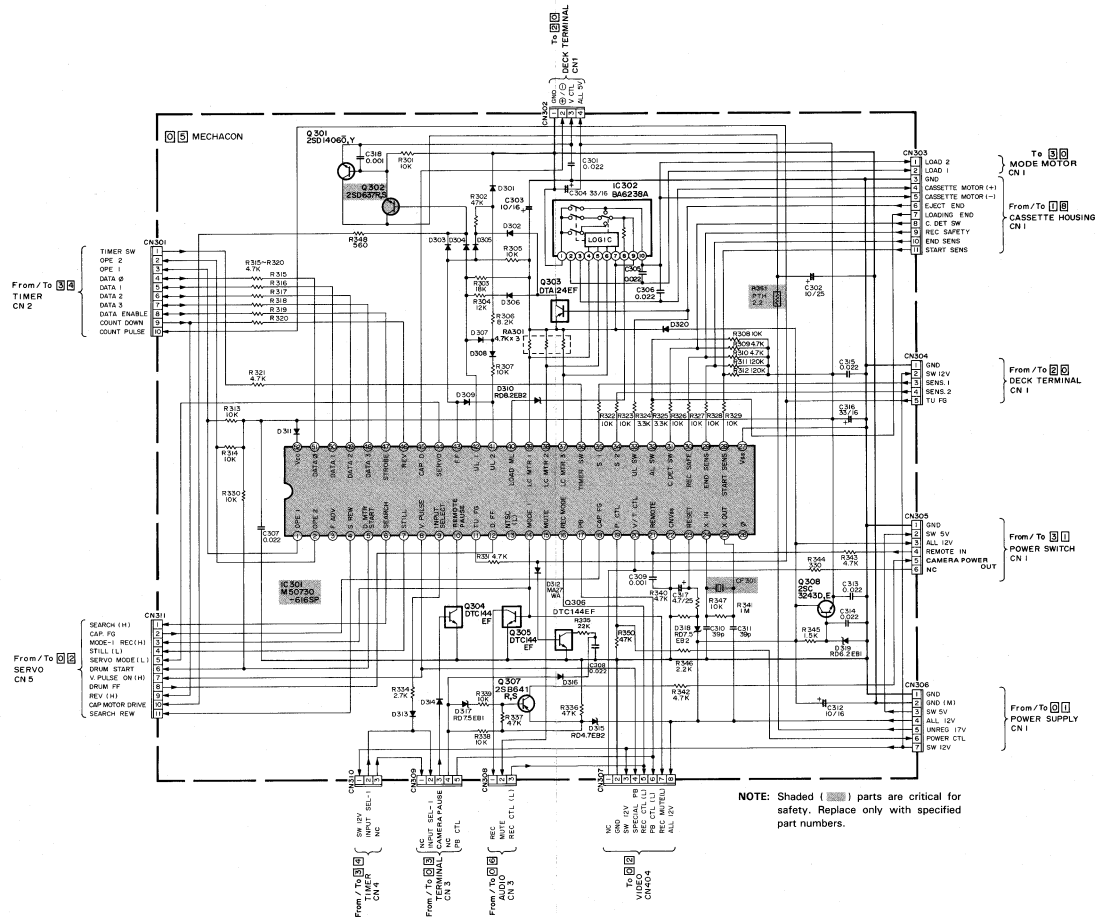


Fig. 1 Detail Enhancer Basic Block Diagram

4.3 VIDEO (LUMINANCE) BLOCK DIAGRAM



4.8 MECHACON SCHEMATIC DIAGRAM



NOTE: Shaded (■) parts are critical for safety. Replace only with specified part numbers.

ELNA .47
94V-O

PU221780-1

M-CTL PWB ASSY

PU221780-1
M-CTL PWB

30
M MOTOR PWB
PU57725-1-2

POSITIVE
-1-2
MOTOR P.W.B.

1 2

C1

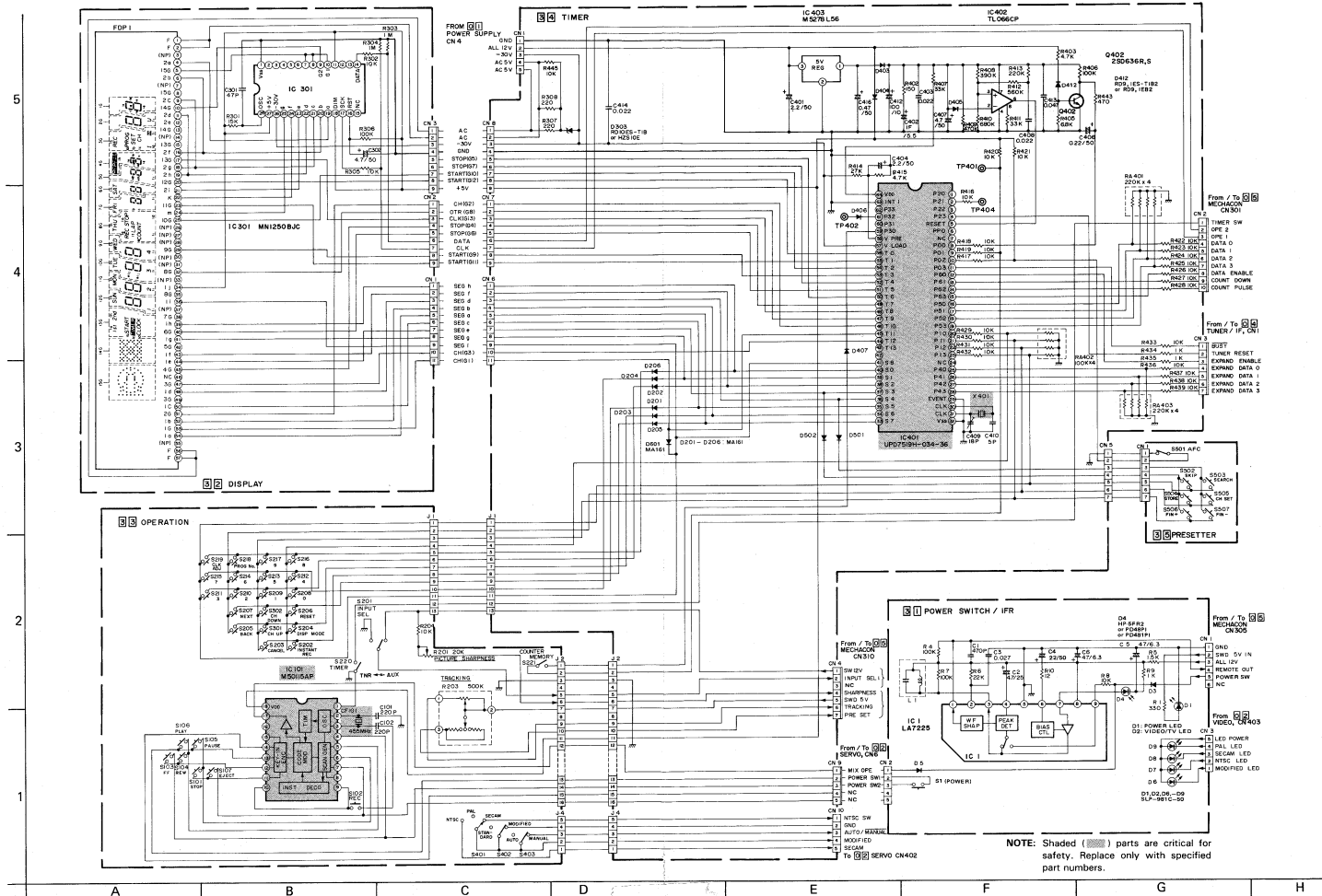
C2

C3

GROUND

TIMER DISPLAY

4.10 TIMER, DISPLAY AND POWER SWITCH SCHEMATIC DIAGRAMS

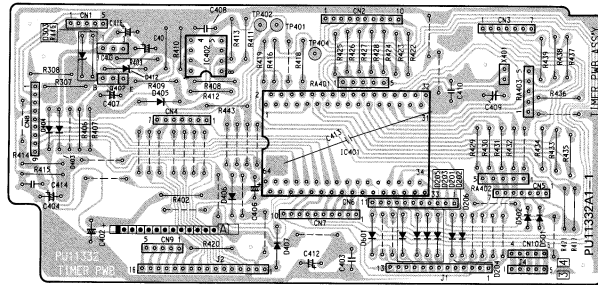


TIMER

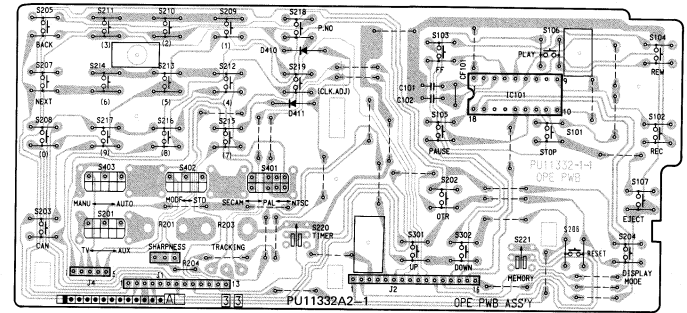
DISPLAY

4.11 TIMER, DISPLAY, POWER SWITCH AND VIDEO SUB CIRCUIT BOARDS

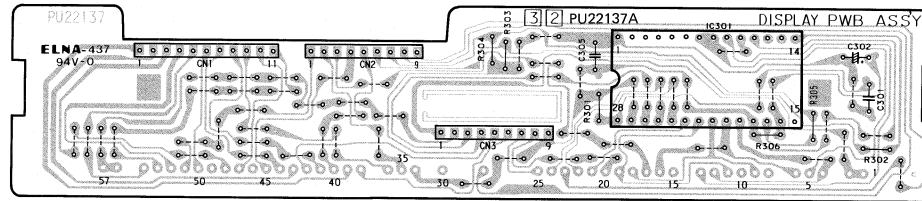
-TIMER-



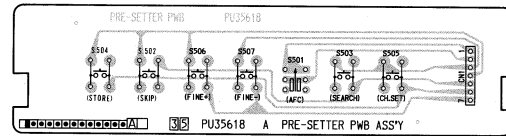
-OPERATION-



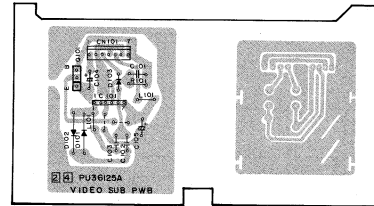
-DISPLAY-



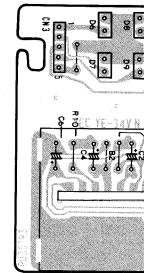
-PRESETTER-



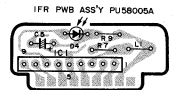
-VIDEO SUB-



-POWER SWITCH-



- IFR -



A

B

C

D

E

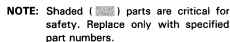
F

G

H

VIDEO

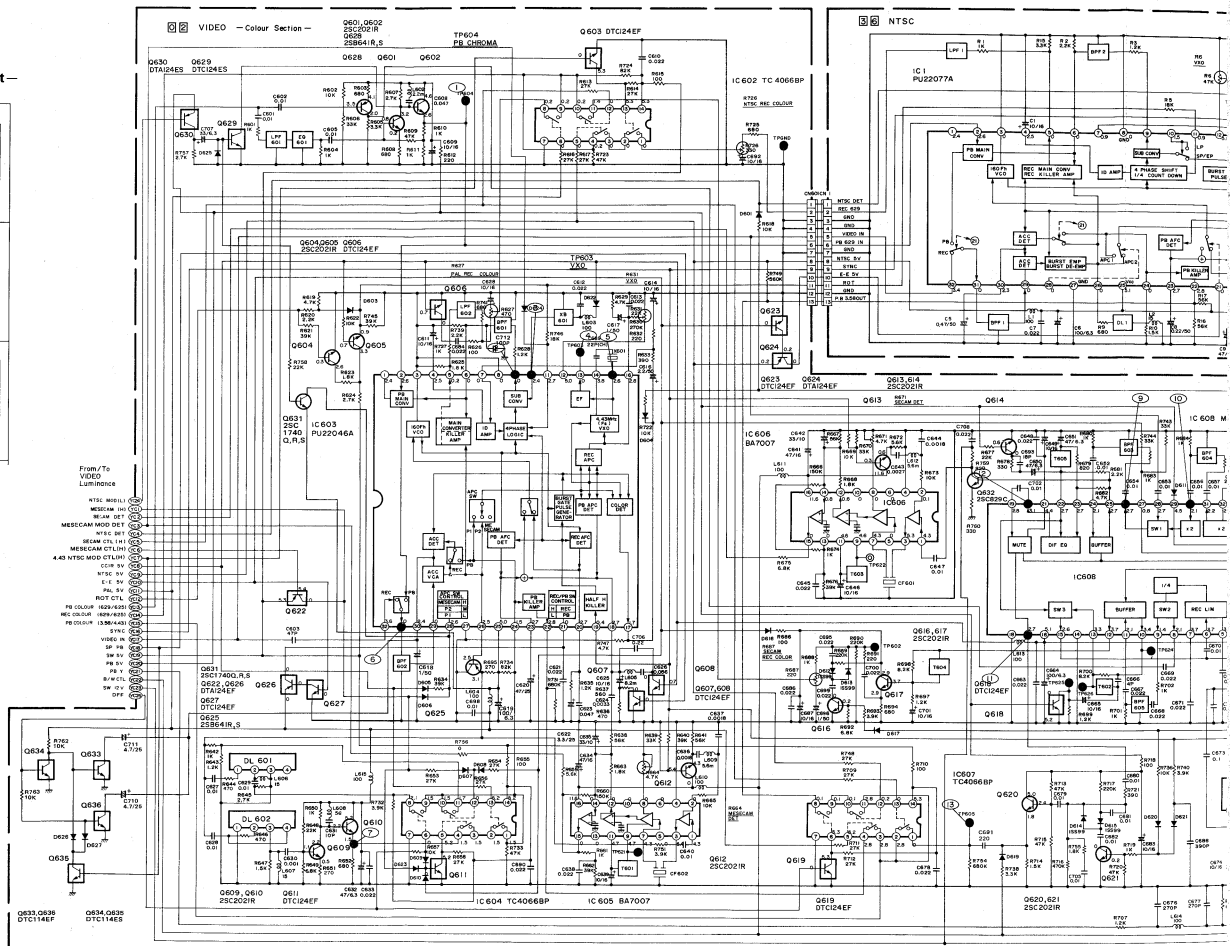
4.12 VIDEO (LUMINANCE) SCHEMATIC DIAGRAM

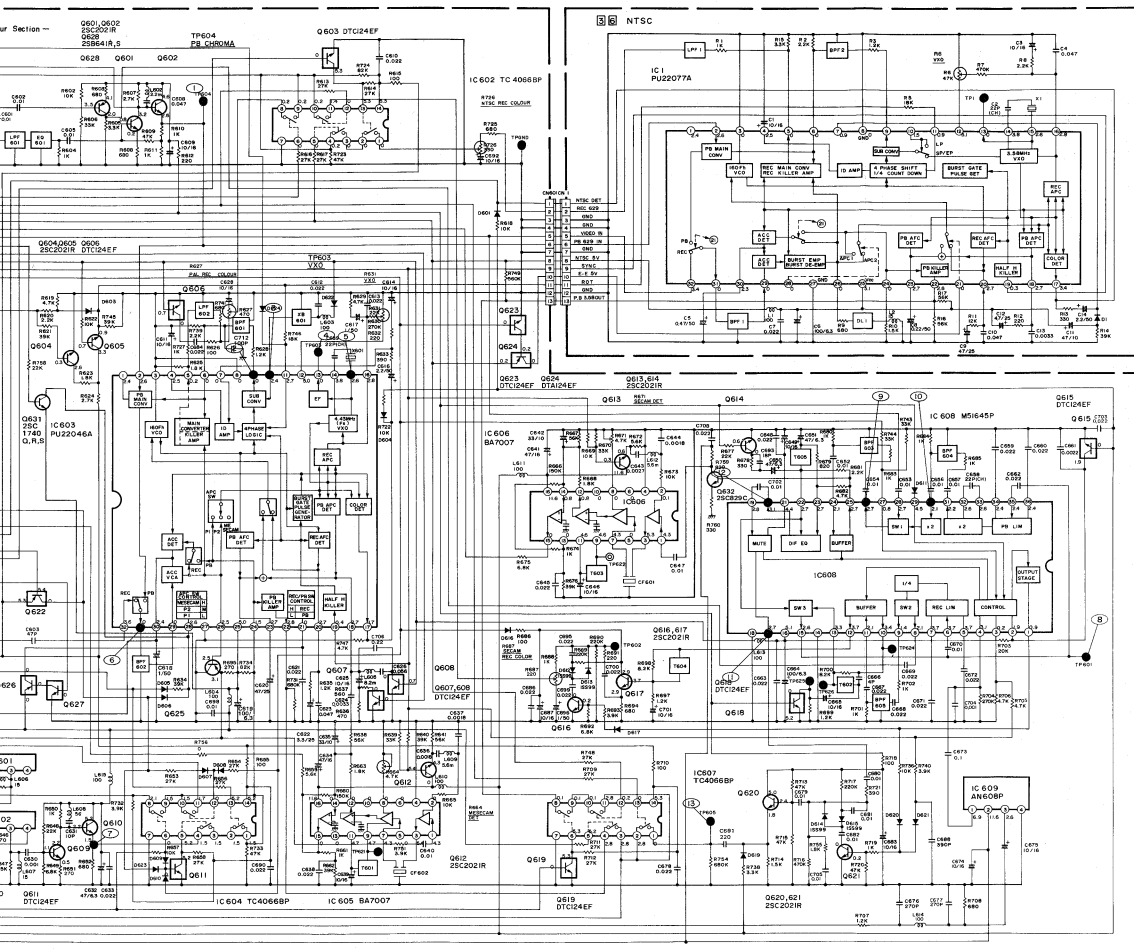


1 TP406 0.3 Vp-p	2 O428 E 0.8 Vp-p	3 IC405-15 0.5 Vp-p
4 IC405-31 0.6 Vp-p	5 TP426 0.25 Vp-p	6 TP425 0.23 Vp-p
7 IC405-7 0.6 Vp-p	8 IC401-1 4.0 Vp-p	9 IC402-3 4.5 Vp-p
10 IC402-4 5.5 Vp-p		

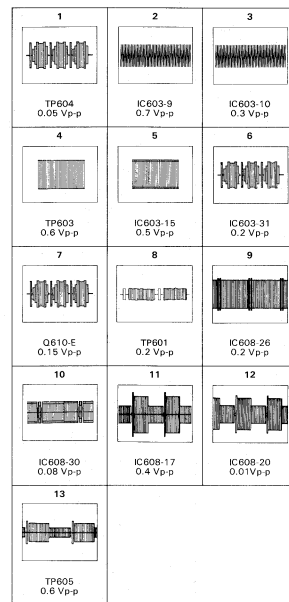
[illegible]

Note:
This circuit is included. after 1983.
march production.

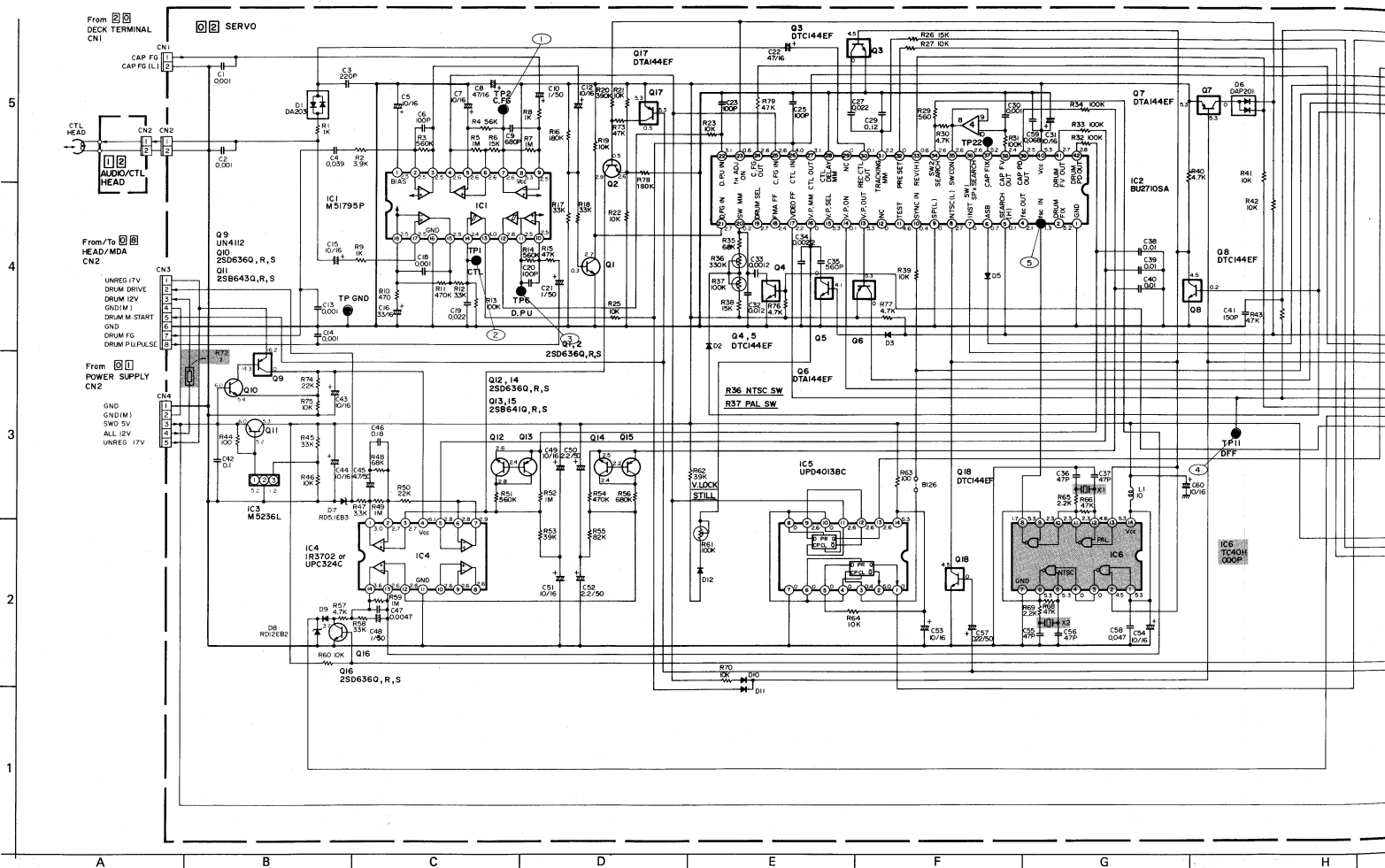




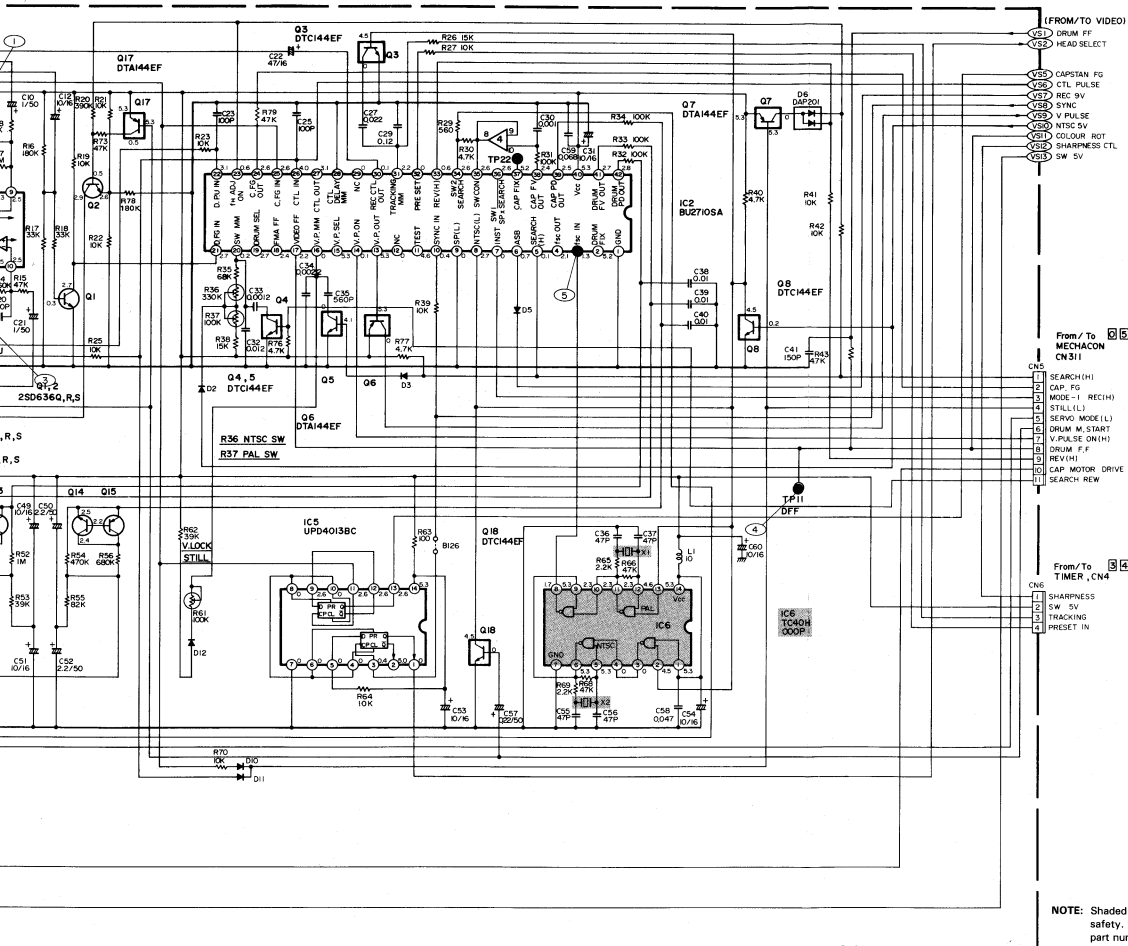
—Waveforms of VIDEO (Colour) circuit—



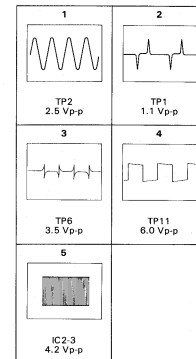
4.14 SERVO SCHEMATIC DIAGRAM



SERVO SERVO



—Waveforms of SERVO circuit—



From/To
MECHACON
CN311

- 1 SEARCH (H)
- 2 CAP. FG
- 3 MODE-1 REC(H)
- 4 STILL(L)
- 5 SERVO MODE(L)
- 6 DRUM M. START
- 7 V.PULSE ON(H)
- 8 DRUM F.F
- 9 REV(H)
- 10 CAP. MOTOR DRIVE
- 11 SEARCH REW

From/To
TIMER ,CN4

- 1 SHARPNESS
- 2 SW. SV
- 3 TRACKING
- 4 PRESET IN

NOTE: Shaded (■) parts are critical for safety. Replace only with specified part numbers.

D

E

F

G

H

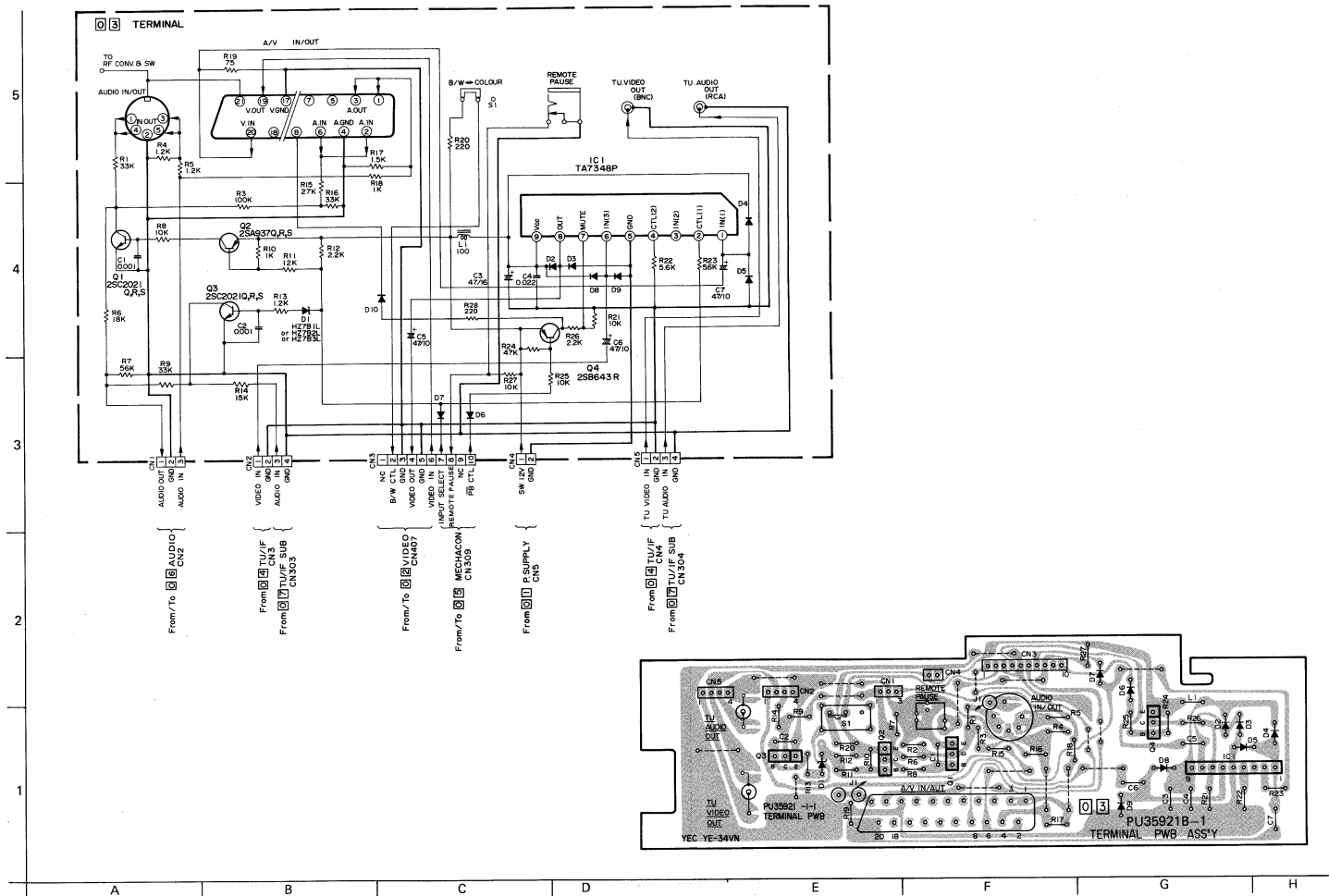
I

J

K

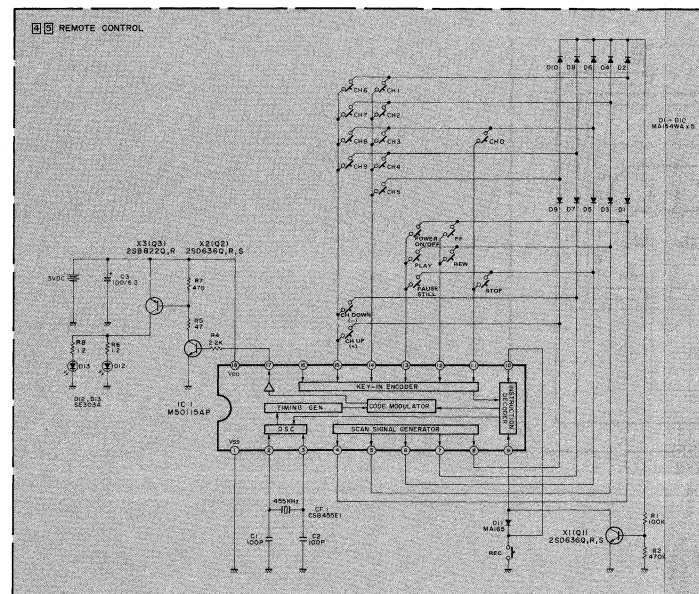
TERMINAL TERMINAL

4.21 TERMINAL SCHEMATIC DIAGRAM & CIRCUIT BOARD



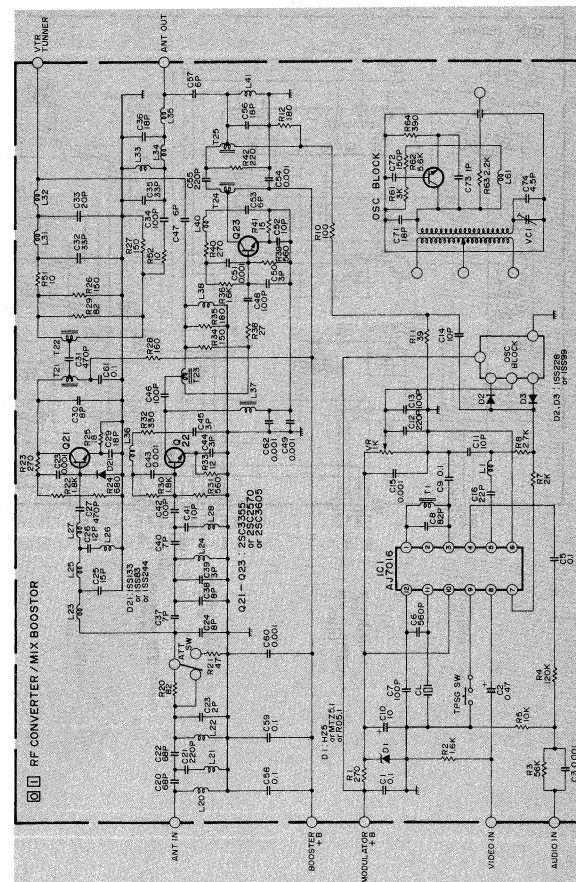
REMOTE CONTROL RF CONVERTER

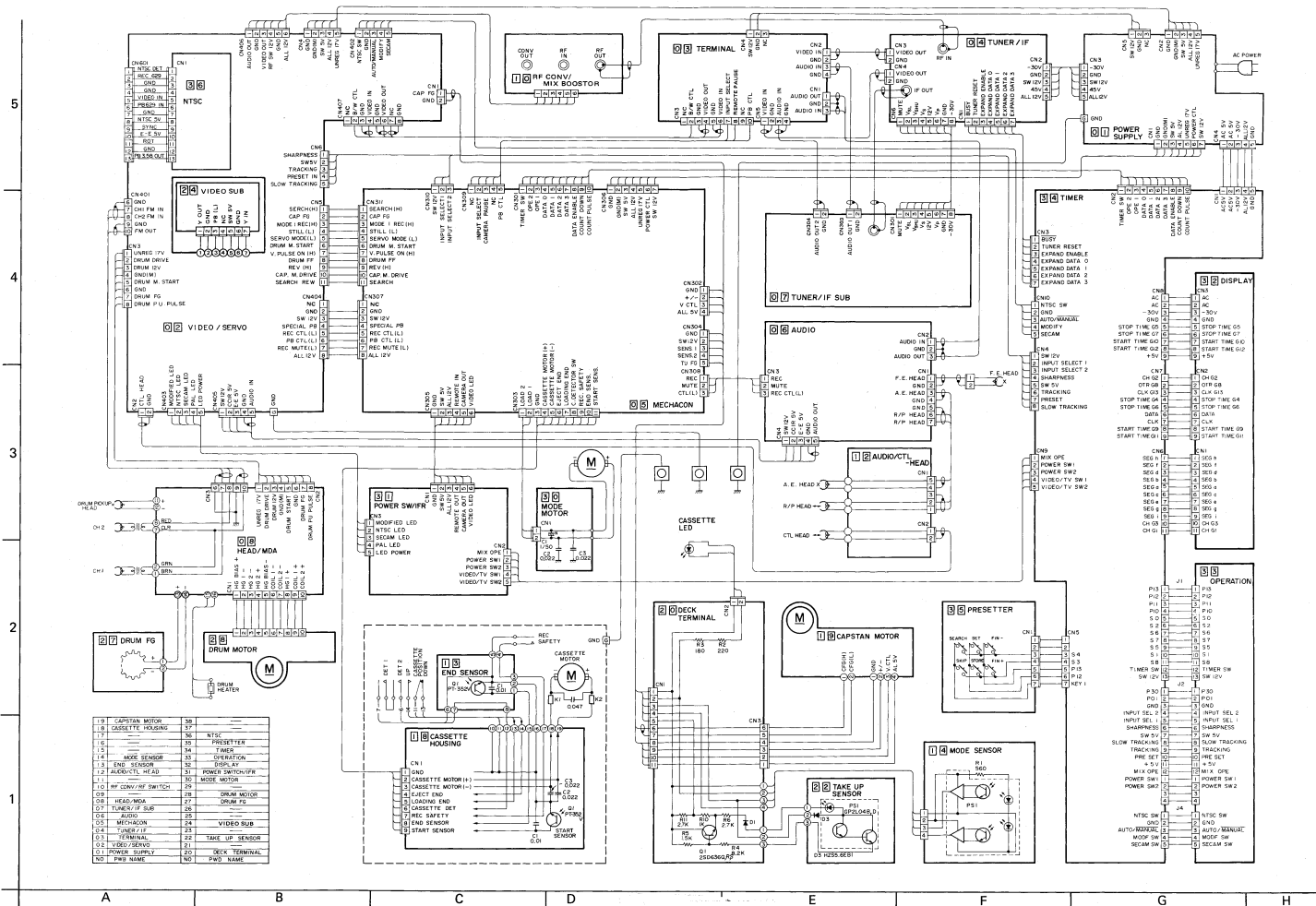
4.24 REMOTE CONTROL SCHEMATIC DIAGRAM



NOTE: Shaded () parts are critical for safety. Replace only with specified part numbers.

4.25 RF CONVERTER & MIX BOOSTER SCHEMATIC DIAGRAM





SECTION 5

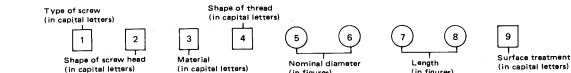
EXPLODED VIEWS AND PARTS LIST

SAFETY PRECAUTION

Parts identified by the Δ symbol are critical for safety. Replace only with specified part numbers.

5.1 STANDARD PART NUMBER CODING (Screw coding)

Standard screw part numbers are as follows.

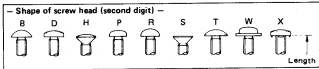
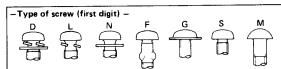


Type of screw (first digit)

- S Normal screws
- D Assembled screws (with plain and spring washers)
- L " (with spring washer)
- N " (with plain washer)
- F Feather screws
- G Washer head tapping screws
- M Wood screws

Shape of screw head (second digit)

- B Brazier head
- D Binding head
- H Oval countersunk head
- P Pan head
- R Round head
- S Flat head
- T Truss head
- W Washer head (machine screws)
- X Toothed head



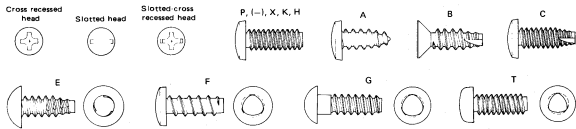
Material (third digit)

- | | |
|-------------------|-----------------|
| S Steel | N Nickel silver |
| E Stainless steel | Y Cast brass |
| C Cast iron | A Aluminum |
| U Copper | Z Zinc alloy |
| B Brass | K Polycarbonate |
| P Phosphor bronze | |

Shape of thread (fourth digit)

- P Cross recessed head screws
- (-) Slotted head machine screws
- X Slotted cross recessed head machine screws
- K Cross recessed head machine screws for precision equipment (type 1)
- H " (type 3)
- A Cross recessed head tapping screws (type 1)
- B " (type 2)
- C " (type 3)
- E Cross recessed head special tapping screws (brand: evertight)
- F " (brand: P-tight)
- T " (brand: taptight)
- G " (brand: taptight)

- Shape of thread (fourth digit) -



Nominal diameter (fifth and sixth digits)

The fifth and sixth digits are numbers indicating a nominal diameter or dimension. If the dimension exceeds 10 mm, three digits are used. The number indicates a nominal diameter or dimension, given in millimeters, multiplied by ten.

Length (seventh and eighth digits)

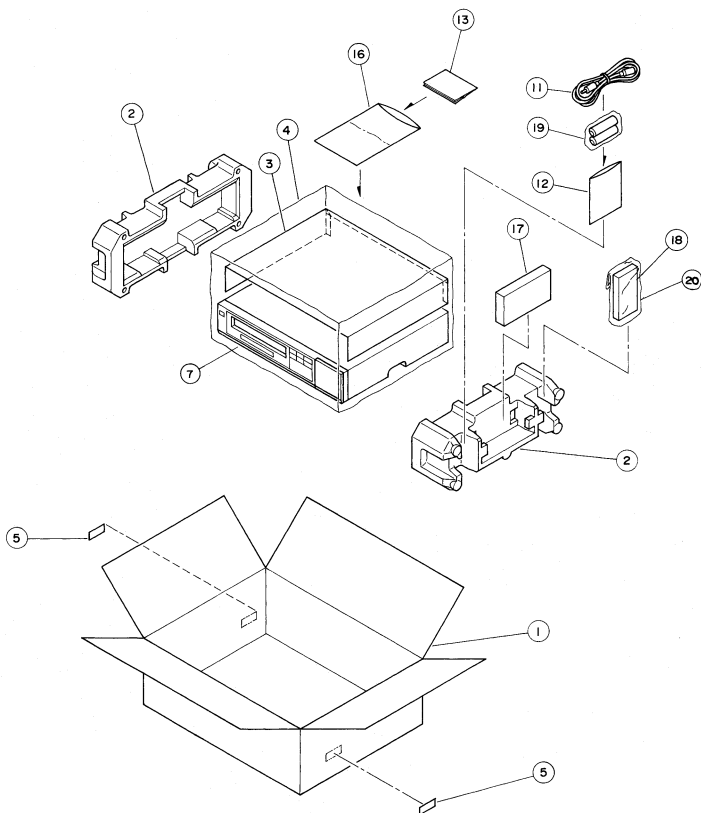
The seventh and eighth digits are numbers indicating length in millimeters. The preceding figure is zero when the dimension is smaller than 10 mm. For machine screws used in precision equipment whose length is given in units of 0.1 mm, the number indicates ten times the size of their length.

Surface treatment (ninth digit)

- Z Dichromate treatment after galvanizing (IMFZn II-C)
- N Nickel plating (MFNi II, MFNi I)
- R Chromium plating (MBCr II, MBCr I)
- G Silver plating (SP4)
- B Black coating after plating
- F Blackening of iron (FB)
- M Blackening after galvanizing
- K Pickling of brass (PF2)
- P Phosphate treatment
- W Uni-chrome plating
- L Coating with transparent paint
- A Coloring red after galvanizing (IMFZn II-C)
- C Coloring blue after galvanizing (IMFZn II-C)
- T Coloring green after galvanizing (IMFZn II-C)
- V Coloring purple after galvanizing (IMFZn II-C)

5.2 EXPLODED VIEWS AND PARTS LIST

5.2.1 Packing and accessories [M1]

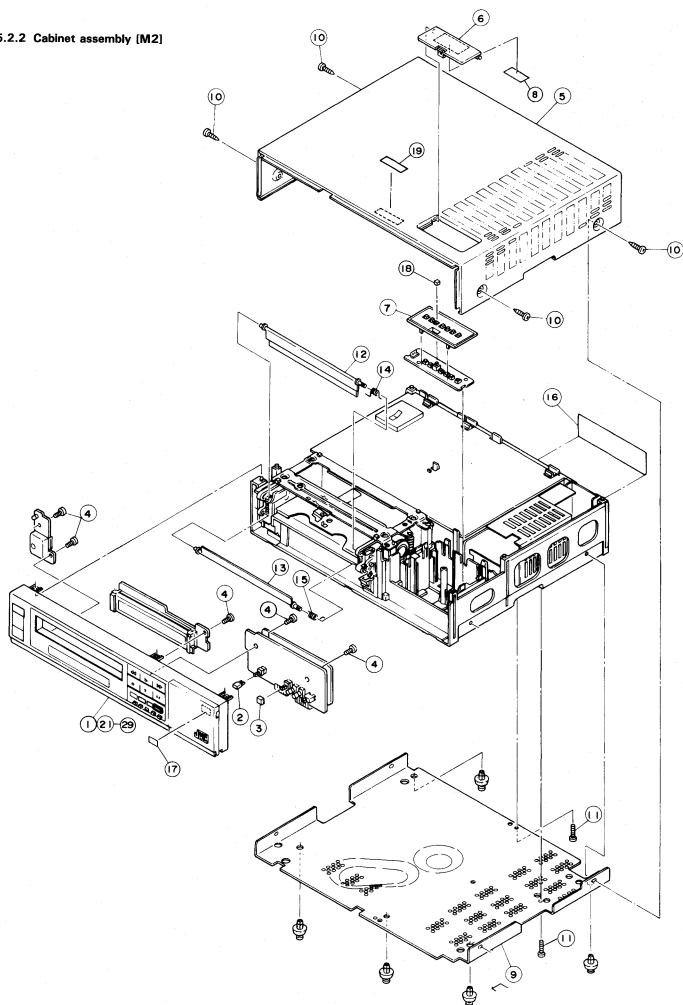


Packing and accessories [M1]

Ref. No.	Part No.	Part Name	Description	Q'ty
1	PQ30692-13	Packing Case	Right and Left	1
2	PQ30693A-5	Cushion Assembly		1
3	PQ41026-3	Protect Sheet		1
4	PQM30021-33	Poly Bag		1
5	PUP40329	Serial No. Sticker		2
6	—	—	Refer to [M2]	—
7	—	Cabinet Assembly		1
8	—	—		—
9	—	—		—
10	—	—		—
△ 11	PU55906	Aerial Cable Assembly		1
12	QPGA020-02003	Poly Bag		1
△ 13	PU30425-808	Instruction Book		1
14	—	—		—
15	—	—		—
16	QPGA025-03505	Poly Bag	Refer to [M6], Incl. 20 2 Cells for 18	1
17	PTE-30-101	Cassette Tape		1
△ 18	PQ101818-1	Remote Control Unit		1
△ 19	UM-3DJ2P	Battery		1
20	PQ10181-001	Poly Bag		1

NOTE: [M] indicates mechanical symbol number.

5.2.2 Cabinet assembly (M2)



Chassis assembly [M3]

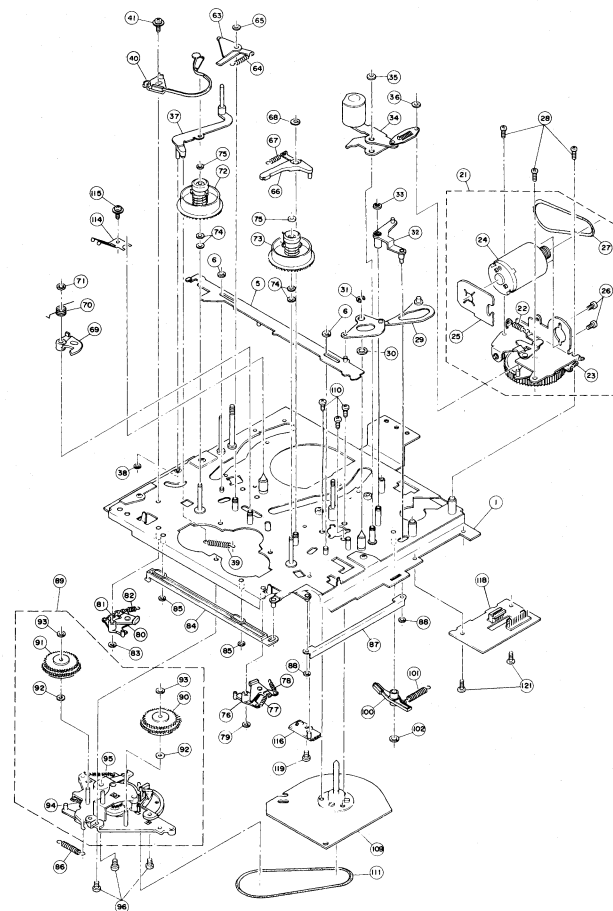
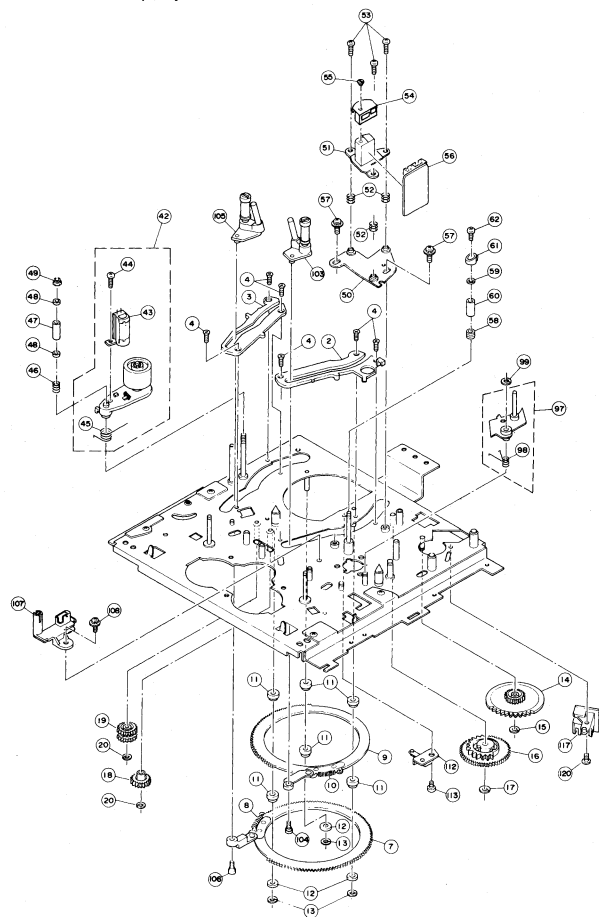
Ref. No.	Part No.	Part Name	Description	Q'ty
1	—	Mechanism Assembly	Refer to [M4]	1
2	—	Drum Assembly	Refer to 21—28	1
3	—	Cassette Housing Assembly	Refer to [M5]	1
4	—	Power Supply Board Assembly	Refer to [01]	1
5	—	VS Board Assembly	Refer to [02]	1
6	—	Tuner/IF Board Assembly	Refer to [04]	1
7	—	RF Converter & Mixer	Refer to [04]	1
8	—	Presetter Board Assembly	Refer to [35]	1
9	—	Head/MDA Board Assembly	Refer to [08]	1
10	—	Power Switch Board Assembly	Refer to [31]	1
11	—	IFR Board Assembly	Refer to [31]	1
12	—	Display Board Assembly	Refer to [32]	1
13	—	Terminal Board Assembly	Refer to [03]	1
14	—	Timer Board Assembly	Refer to [34]	1
15	—	Operation Board Assembly	Refer to [33]	1
16	—	Audio Board Assembly	Refer to [06]	1
17	—	NTSC Board Assembly	Refer to [36]	1
18	—	Mechacon Board Assembly	Refer to [05]	1
19	—	Tuner/IF Sub Board Assembly	Refer to [07]	1
20	—	Video Sub Board Assembly	Refer to [24]	1
21	PQ200168-2	Upper Drum Assembly	Upper Drum	1
22	NDBP2608N	Screw	Incl. 24—28	2
23	PQ20024S-22	Drum Motor Assembly	or PU56202-6	1
24	PU56202-5	Heater	Heater	1
25	SDBP2603N	Screw		2
26	PU57619	Pick-up Head	Pick-up Head	1
27	SPSH1735Z	Screw (Precision)	or PQ41596A	1
28	PU49483-3	Commutator		1
31	—	Chassis		1
32	PU57662-1-1	Foot		5
33	—	Board Hinge	Refer to [02]	3
34	—	—		—
35	PQ41476-2-2	Earth Spring	GND	1
36	—	—		—
37	—	—		—
38	PU57677-1-3	Shield Case	Head/MDA Board	1
39	SPST3008Z	Tapping Screw	Shield Case	1
40	PQ40413	Special Screw	Main-deck	1
41	SDSA4012Z	Tapping Screw	Main-deck	2
42	PQ41396	Special Screw	Main-deck	1
43	PQ41804-1-2	Bracket		1
44	SDSA4012Z	Tapping Screw	Bracket	1
45	SDSF3012Z	Tapping Screw	Cassette Housing	4
46	SDSA4012Z	Tapping Screw		1
47	DPSP3008Z	Screw	Main Board	2
48	—	—		—
49	SDST3014Z	Tapping Screw	GND	1
50	—	Fuse	Refer to [01]	2

Ref. No.	Part No.	Part Name	Description	Q'ty
51	—	—		—
52	—	—		—
53	—	—		—
54	PQ31071	Bracket Sheet		1
55	DPSP2606Z	Screw	Head/MDA Board	2
56	LPSP2606Z	Screw	Head/MDA Board	1
57	PU41624-6	Isolation Washer	VS Board	1
58	LPSP3008Z	Screw	Drum	3
59	PQ30772C-2	Shield Assembly	Drum	1
60	SDST3006Z	Screw	Shield Cover	3
61	PQ41153	Earth Plate	Cassette Housing	1
62	PQ42260	Board Holder	Mechacon Board	1
63	SDSF3012Z	Tapping Screw	Board Holder	1
64	PQ30936	Board Holder	NTSC Board	2
65	PQ31168A-1	Shield Cover Assembly		1
△	—	—		
70	PU58517C	Power Supply Unit	Incl. 4, 70—77	1
71	PU59085-32	Chassis		1
72	PU59085-34	Shield Cover		1
73	PU59085-35	Insulator		1
74	PU59085-37	Spacer		1
75	PU59085-56	Label	Power Supply Board	1
76	PU59085-57	Screw		2
77	PU59085-58	Screw	Power Switch	5

NOTES: [M] indicates mechanical symbol number.

[2 digits] indicates circuit board symbol number.

5.2.4 Mechanism assembly [M4]



Mechanism assembly (M4)

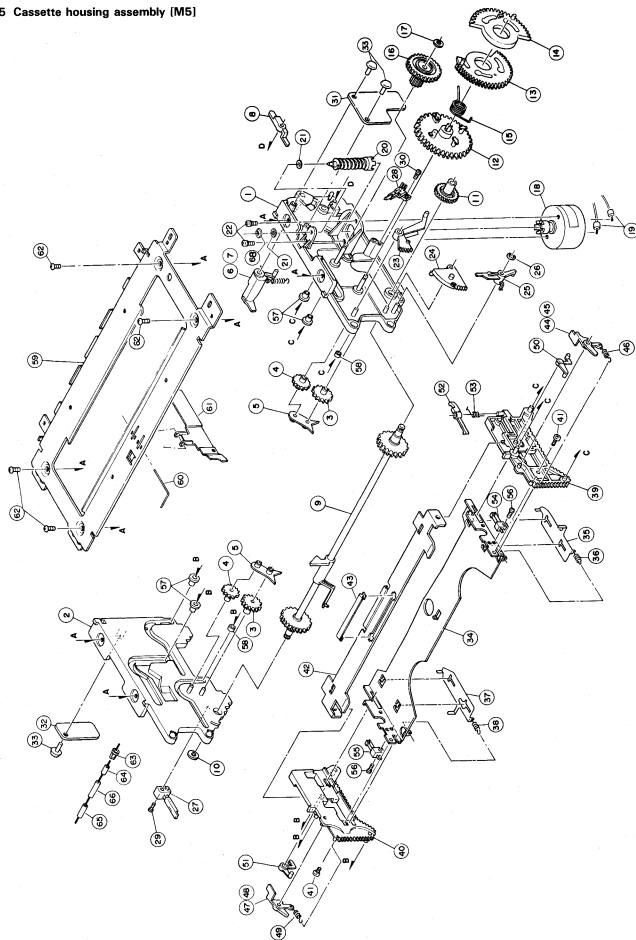
Ref. No.	Part No.	Part Name	Description	Q'ty
1	—	Main-deck Assembly		1
2	PQ30486	Loading Guide (T)		1
3	PQ30487	Loading Guide (S)		1
4	PQ41269	Special Screw	Loading Guides	6
5	PQ30130B-3	Slide Plate Assembly		1
6	PQM30017-8	Slit Washer		2
7	PQ40223B	Loading Ring Assembly (S)	Slide Plate Incl. 8	1
8	PQM30001-151	Spring		1
9	PQ40227B	Loading Ring Assembly (T)	Incl. 10	1
10	PQM30001-151	Spring		1
11	PQ40213	Collar		6
12	PQM30005-29	Collar		3
13	PQM30017-4	Slit Washer	Loading Rings	3
14	PQ30489	Loading Gear (1)		1
15	PQM30017-12	Slit Washer	Loading Gear (1)	1
16	PQ41354A	Loading Gear (2) Assembly		1
17	PQM30017-12	Slit Washer	Loading Gear (2)	1
18	PQ40219	Connect Gear (1)		1
19	PQ40220	Connect Gear (2)		1
20	PQM30017-8	Slit Washer	Connect Gears	2
21	PUS36689S	Drive Gear Bracket Assembly	Incl. 22–27	1
22	PQM30001-129	Spring		1
23	PQM30001-130	Spring		1
24	PQ40244A-2	Motor Assembly	Mode control	1
25	—	Motor Board Assembly	Refer to [30]	1
26	SPSP3003Z	Screw	Motor	2
27	PQM30003-14	Belt	Mode Control	1
28	SDSP2608Z	Screw	Drive Gear Bracket	1
29	PQ40246A	Lever Assembly		1
30	PQM30005-41	Collar		1
31	REE4000	E-Ring	Lever	1
32	PQ41847A	Cam Arm Assembly		1
33	PQM30017-12	Slit Washer	Cam Arm	1
34	PQ40252B-4	Pinch Roller Arm Assembly		1
35	PQM30017-12	Slit Washer	Pinch Roller Arm	1
36	PQM30017-8	Slit Washer		1
37	PQ41364A	Tension Arm Assembly		1
38	PQM30017	Slit Washer	Tension Arm, or PQM30017-7	1
39	PQM30001-186	Spring	Back Tension	1
40	PQ41370B	Tension Band Assembly		1
41	DPSP3010Z	Screw	Tension Band	1
42	PQ41374D	Full Erase Head Arm Assembly	Incl. 43–45	1
43	PUS7641	Full Erase Head		1
44	SPSG2608Z	Tapping Screw		1
45	PQ4042Z	Spring	Full Erase Head	1
46	PQM30002-112	Spring		1
47	PUS3629-2	Tape Guide	Supply Guide Pole	1
48	PQ40752	Guide Flange		2
49	PQ40353	Nylon Nut	Erase Head Arm	1
50	PQ41376A-1	Head Base Assembly	Audio/Control Head	1
51	PUS8140	Audio/Control Head		1
52	PUS30080-49	Spring		3
53	SPSP2608Z	Screw	Audio/Control Head	3
54	PQ41759	Shield Cap		1
55	HPSP1710N	Screw	Shield Cap	1
56	—	Audio/Control Head Board Assembly	Refer to [12]	1
57	DPSP2608Z	Screw	Head Base	2
58	PQ41348-2	Guide Flange (T)		1
59	PQ40268-2	Guide Flange		1
60	PUS3629-2	Tape Guide	Take-up Guide Pole	1
61	PQ41346	Guide Pole Cap		1
62	SDSP2006Z	Screw	Tape Guide	1
63	PQ40274A-2	Loading Brake (S) Assembly	Incl. 64	1
64	PQM30001-175	Spring		1
65	PQM30017-12	Slit Washer	Loading Brake (S)	1

Ref. No.	Part No.	Part Name	Description	Q'ty
66	PQ40276A-2	Loading Brake (T) Assembly	Incl. 67	1
67	PQM30001-171	Spring		1
68	PQM30017-12	Slit Washer	Loading Brake (T)	1
69	PQ41379A-1	Gear Lever Assembly		1
70	PQ41162-1-2	Spring		1
71	PQM30017-13	Slit Washer	Gear Lever	1
72	PUS7644-1-1	Reel Disk (S)		1
73	PUS7645	Reel Disk (T)		1
74	QO3093-828	Washer		4
75	PQM30017-5	Slit Washer	Reel Disks	2
76	PQ40285A	Main Brake (T) Assembly	Incl. 77 and 78	1
77	PQM30001-135	Spring		1
78	PQM30001-136	Spring		1
79	PQM30017-12	Slit Washer	Main Brake (T)	1
80	PQ40288A	Main Brake (S) Assembly	Incl. 81–82	1
81	PQM30001-135	Spring		1
82	PQM30001-136	Spring		1
83	PQM30017-12	Slit Washer	Main Brake (S)	1
84	PQ30133-1-5	Main Brake Slider		1
85	PQM30017-8	Slit Washer	Main Brake Slider	2
86	PQM30001-178	Spring		1
87	PQ40291	Push Plate		1
88	PQM30017-8	Slit Washer	Push Plate	2
89	PUS7658B-4	Clutch Mechanism Assembly	Incl. 90–95	1
90	PUS6043-1-4	Clutch (T)		1
91	PUS6044-2-5	Clutch (S)		1
92	QO3093-827	Washer		2
93	PQM30017-2	Slit Washer	Clutches	2
94	PQM30001-140	Spring		1
95	PQM30001-139	Spring		1
96	SPSP3006Z	Screw	Clutch Mechanism	3
97	PQ41384A	Guide Arm Assembly	Incl. 98	1
98	PQ41405	Spring		1
99	PQM30017-8	Slit Washer	Guide Arm	1
100	PQ41389A	Motor Brake Assembly	Incl. 101	1
101	PQM30001-182	Spring		1
102	PQM30017-12	Slit Washer	Motor Brake	1
103	PQ40354E-3	Pole Base (T) Assembly		1
104	PQ40295	Flange Screw	Pole Base (T)	1
105	PQ40357B-2	Pole Base (S) Assembly	or PQ40357A-2	1
106	PQ40295	Flange Screw	Pole Base (S)	1
107	PUS8528-2	LED Assembly		1
108	DPSP3006Z	Screw	LED Assembly	1
109	PUS7647V	Capstan Motor		1
110	SDSP2603Z	Screw	Capstan Motor	3
111	PQM30003-10	Belt	Reel	1
112	PUS6930-2	Brush Assembly		1
113	SPSP3003Z	Screw	Brush	1
114	PQ41282	Earth Plate		1
115	DPSP3005N	Screw		1
116	—	Take Up Reel Sensor Board Assembly	Refer to [22]	1
117	—	Mode Sensor Board Assembly	Refer to [14]	1
118	—	Deck Terminal Board Assembly	Refer to [20]	1
119	SPST3008Z	Tapping Screw	Take Up Reel Sensor Board	1
120	DPSP3010Z	Screw	Mode Sensor Board	1
121	SDSP2608Z	Screw	Deck Terminal Board	2

NOTES: [M] indicates mechanical symbol number.

[2 digits] indicates circuit board symbol number.

5.2.5 Cassette housing assembly [M5]



Cassette housing assembly [M5]

Ref. No.	Part No.	Part Name	Description	Q'ty
—	PUS26805U	Cassette Housing Assembly	Incl. 1—68	1
1	PQ30033D-4	Guide Stay (R) Assembly		1
2	PQ30276B-3	Guide Stay (L) Assembly		1
3	PQ40059	Gear (1)	Left and Right	2
4	PQ40060	Gear (2)	Left and Right	2
5	PQ40061	Double Cap		2
6	PQ40102A-1	Door Guide Assembly	Incl. 7, Guide Stay (R)	1
7	PUM30001-111	Spring		1
8	PQ40063	Guide Lever	Guide Stay (R)	1
9	PQ40103A	Connect Gear Assembly		1
10	PUM30017-11	Silt Washer	Connect Gear Assembly	1
11	PQ40065	Cam Gear (2)	Guide Stay (R)	1
12	PQ30028	Cam Gear (1)		1
13	PQ40066-1-2	Loading Slide Gear		1
14	PQ40067-1-2	UL Slide Gear	Unloading	1
15	PQ40068-2	Limiter Spring	Cam Gear (1)	1
16	PQ40484	Worm Wheel		1
17	PUM30017-4	Silt Washer	Worm Assembly	1
18	PQ40090A	Motor Assembly	Cassette Motor	1
19	PU45811	Fiber Beads	Motor Assembly	2
20	PQ40091B	Worm Assembly		1
21	Q03093-830	Washer	Worm Assembly	2
22	SPSP2604Z	Screw	Motor Assembly	1
23	PQ40074	Upper Door Opener		1
24	PQ40075-1-5	Lower Door Opener		1
25	PQ40076-2	Hold Lever	Lower Door Opener	1
26	REE2500X	E-Ring	Hold Lever	1
27	PU51258-3	Leaf Switch	Rec Safety, Guide Stay (L)	1
28	PU55377-2	End Switch	Cassette Load End/Eject End	1
29	SPSP2010Z	Screw	Leaf Switch	1
30	SBSE2610Z	Tapping Screw	End Switch	1
31	—	Cassette Housing Board	Refer to [18]	1
32	—	End Sensor Board	Refer to [13]	1
33	PU48973-3	Stopper	Cassette Housing/End Sensor Boards	3
34	PQ30031-1-3	Cassette Holder		1
35	PQ40106B-1	Slide Plate (R) Assembly	Incl. 36	1
36	PUM30001-210	Spring		1
37	PQ40107B-1	Slide Plate (L) Assembly	Incl. 38	1
38	PUM30001-210	Spring		1
39	PQ10009-1-4	Bracket (Right)		1
40	PQ10009-2-3	Bracket (Left)		1
41	SPSP2003Z	Screw	Bracket (Right/Left)	2
42	PQ30208	Reinforcement		1
43	PQ40479	Guard	Reinforcement	1
44	PQ40108B-3	Lock Lever (R) Assembly	Incl. 45, 46	1
45	PQM30019-10	Pad	Lock Lever (R)	1
46	PUM30001-110	Spring		1
47	PQ40109B-3	Lock Lever (L) Assembly	Incl. 48, 49	1
48	PQM30019-10	Pad		1
49	PUM30001-110	Spring		1
50	PQ40081A	Switch Lever (R) Assembly	Insert Switch (R)	1
51	PQ40081B	Switch Lever (L) Assembly	Insert Switch (L)	1
52	PQ40083-1-4	Lid Opener	Bracket (R)	1
53	PQ40084-1-2	Torsion Spring	Lid Opener	1
54	PU55378	Insert Switch (Right)	Cassette in Detector, or PU55378-1-1	1
55	PU55378-2	Insert Switch (Left)	Cassette in Detector, or PU55378-2-1	1

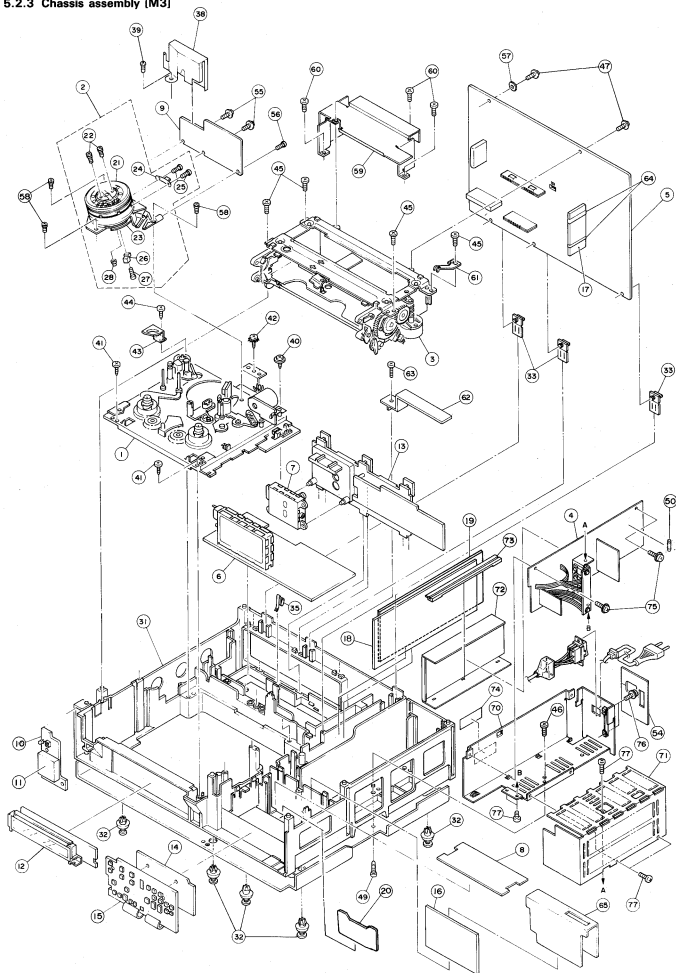
Cabinet assembly [M2]

Ref. No.	Part No.	Part Name	Description	Q'ty
Δ 1	PQ10163G-17	Front Panel Assembly	Incl. 21 – 29	1
2	PQ30590	Button	MEMORY	1
3	PQ41554-1-4	Button	TIMER	1
4	SDSF3008Z	Tapping Screw	P. SW, DISPLAY, OPERATION boards	5
Δ 5	PQ10148-1-4	Top Cover		1
6	PU35584-1-3	Channel Cover		1
7	PQ30784B	Button Assembly	Channel Set	1
8	PQ42435-2	Preset Label		1
Δ 9	PQ10122-1-6	Bottom Cover		1
10	SDSA4014R	Tapping Screw	Top Cover	4
11	SDSF3012Z	Tapping Screw	Bottom Cover	2
12	PQ30107ET	Upper Door Assembly		1
13	PQ30030-8-15	Lower Door		1
14	PQ40104-2	Spring	Upper Door	1
15	PQ40472	Spring	Lower Door	1
16	—	Rating Label		1
17	PU59176-2	HQ Label		1
18	PQ41268	Button		1
19	PQ42588	Caution Sticker		1

— Front panel components —

21	PQ41555B	Button Assembly	POWER ON:OFF	1
22	PQ30596	IFR Window	Infrared	1
23	PQ30587	Button	EJECT	1
24	PQ30601	Button	INSTANT RECORD	1
25	PQ30582-23	Door	Program	1
26	PU35597-2	Program Label		1
27	PQ30584-13	Program Plate		1
28	PQ41501	Mark	JVC	1
29	PQM30002-99	Spring	POWER Button	1

5.2.3 Chassis assembly [M3]

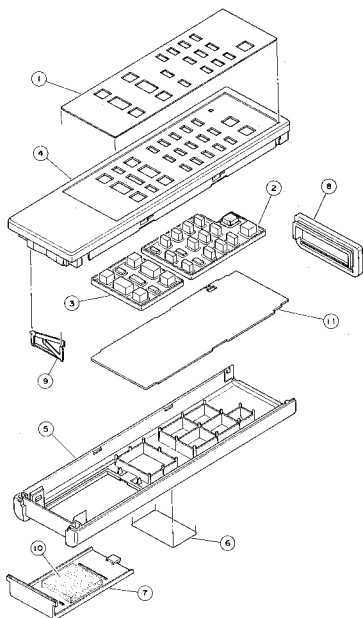


Ref. No.	Part No.	Part Name	Description	Q'ty
56	SPSP1704Z	Screw	Insert Switch (Right/Left)	2
57	PQ40086	Roller	Guide Stay (Right/Left)	4
58	PQ40087-2	Mini Roller	Guide Stay (Right/Left)	2
59	PQ20043	Roof Plate		1
60	PQ40440-1-1	Rod	Roof Plate	1
61	PQ40478-1-3	Upper Door Stopper		1
62	SBSE2608Z	Tapping Screw	Roof Plate	4
63	PQ40299	Wire Cap	Guide Stay (L)	1
64	QXT629H-015	UL Tube		1
65	QXT329H-035	UL Tube		1
66	QXTF253-040	UL Tube		1
67	PUM30017	Slit Washer	Worm Assembly	1
68	Q03093-838	Washer	Worm Assembly	1

NOTES: [M] indicates mechanical symbol number.

[2 digits] indicates circuit board symbol number.

5.2.6 Remote control unit [M6]



Remote control unit [M6]

Ref. No.	Part No.	Part Name	Description	Q'ty
1	—	Remote Control Unit	Refer to [M1], Incl. 1 — 11	1
2	PU35602-2-2	Top Panel		1
3	PU35603	Button (1)		1
4	PU35604	Button (2)		1
5	PU35601	Top Case		1
6	PU35423	Bottom Case		1
7	PU35432	Remocon Label	Excepting Sponge Infrared Window Top Case Battery Cap	1
8	PU35422	Battery Cap		1
9	PQ10181-004	Smoked Board		1
10	PQ10181-006	Battery Terminal		1
11	PQ10181-007	Damper		1
11	—	Remote Control Board Assembly	Refer to [45]	1

NOTES: [M] indicates mechanical symbol number.
[2 digits] indicates circuit board symbol number.

SECTION 6 ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the Δ symbol are critical for safety. Replace only with specified part numbers.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

RESISTORS—All resistance values are in ohms (Ω), unless otherwise indicated.

k : 1,000 (Kilo)
M : 1,000,000 (Mega)

Chip R : Chip Resistor
Chip VR : Chip Variable Resistor
Comp. R : Composition Resistor
CR : Carbon Film Resistor
FR : Fusible Resistor
MFR : Metal Film Resistor
MPR : Metal Plate Resistor
OMR : Oxide Metal Film Resistor
PMR : Precision Metal Film Resistor
UFR : Unflammable Resistor
VR : Variable Resistor (Potentiometer)
WR : Wire Wound Resistor

CAPACITORS—All capacitance values are in μ F, unless otherwise indicated.

pF : μ F (Pico farad)

C Cap : Ceramic Capacitor
Chip Cap : Chip Capacitor
Chip T Cap : Chip Tantalum Capacitor
E Cap : Electrolytic Capacitor
FM Cap : Film Mica Capacitor
LL Cap : Low Leak Current Electrolytic Capacitor
MM Cap : Metalized Mylar Capacitor
MP Cap : Metalized Paper Capacitor
MY Cap : Mylar Capacitor
NP Cap : Non-polar Capacitor
PC Cap : Polycarbonate Capacitor
PP Cap : Polypropylene Capacitor
PS Cap : Polystyrol Capacitor
T Cap : Tantalum Capacitor
TF Cap : Thin Film Capacitor
TR Cap : Trimmer Capacitor

NOTE: [2 digits] indicate circuit board symbol number.

6.2.1 Power supply board assembly [01]

..... ▲ PU59085-60

Symbol No.	Part No.	Part Name	Description
IC701	M6236L	Integrated Circuit	
Q01	2SC3506	Transistor	
Q02	2SC1685	Transistor	
	or 2SC1740	Transistor	
Q03	2SA564A	Transistor	
Q04	2SC1573B	Transistor	
Q05	2SD966	Transistor	
	or 2SC1318	Transistor	
Q06	2SC1318	Transistor	
Q07	2SD966	Transistor	
	or 2SC1318	Transistor	
Q101	2SD1266A	Transistor	
Q601	2SB941A	Transistor	
Q602	2SA564A	Transistor	
Q603	2SA564A	Transistor	
Q701	2SD1266A	Transistor	
Q702	2SC1685	Transistor	
	or 2SC1740	Transistor	
CR1	NT101	PUT	
D01	D3SB60	Diode Stek	
D02	ERC250	Diode	
D03	MA162	Diode	
D04	MC931	Diode Array	
D05	MC931	Diode Array	
D06	MA161	Diode	
D07	ERA21-06	Diode	
D08	MA162	Diode	
D101	ERA21-06	Diode	
D102	MA161	Diode	
D201	ERA21-06	Diode	
D301	ERA21-06	Diode	
D401	MA649HD	Diode	
D501	SH1A02	Diode	
D601	MA649HD	Diode	
D701	ERC2506	Diode	
ZD01	RD6.8EB3	Zener Diode	
ZD02	RD6.2EB2	Zener Diode	
ZD03	RD7.5EB3	Zener Diode	
ZD04	RD18EB3	Zener Diode	
ZD05	RD12EB3	Zener Diode	

Symbol No.	Part No.	Part Name	Description
ZD101	RD6.8EB3	Zener Diode	
ZD701	RD6.8EB3	Zener Diode	
R01	QRD121J-105	CR	
R02	PU59085-19	CR	56K
R03	QRD14AJ-474	CR	
R04	QRD14AJ-474	CR	
R05	QRD121J-223	CR	
R06	QRD121J-223	CR	
R07	QRD121J-273	CR	
R08	QRD121J-273	CR	
R09	QRD14AJ-103	CR	
R10	QRD14AJ-8R2	CR	
R11	QRD121J-221	CR	
R12	QRD121J-221	CR	
R13	QRD14AJ-102	CR	
R14	QRD14AJ-391	CR	
R15	PU59085	CR	20kΩ
R16	QRD14AJ-221	CR	
R17	QRD14AJ-223	CR	
R18	QRD14AJ-562	CR	
R19	PU58517-006	OMR	470Ω
R20	QRD121J-161	CR	
R21	QRD121J-181	CR	
R22	QRD14AJ-102	CR	
R23	QRD14AJ-103	CR	
R24	QRD14AJ-2R7	CR	
R25	QRD14AJ-331	CR	
R26	QRD14AJ-472	CR	
R27	QRD14AJ-101	CR	
R28	QRD14AJ-272	CR	
R29	ORG026J-221	OMR	
R30	ORG026J-221	OMR	
R31	QRD14AJ-471	CR	
R101	PU59085-20	FR	0.56Ω
R102	QRD14AJ-472	CR	
R201	PU59085-22	FR	4.7Ω
R301	PU59085-22	FR	4.7Ω
R401	PU59085-20	FR	0.56Ω
R501	PU59085-20	FR	0.56Ω
R601	QRD14AJ-152	CR	
R602	QRD14AJ-221	CR	
R603	QRD14AJ-682	CR	
R604	QRD14AJ-103	CR	
R701	—	—	
R702	QRD14AJ-103	CR	
R703	—	—	
R704	QRD14AJ-103	CR	

Symbol No.	Part No.	Part Name	Description
R705	QRD14AJ-122	CR	
R706	QRD14AJ-224	CR	
R707	QRD14AJ-151	CR	
R708	QRD14AJ-181	CR	
R709	QRD14AJ-682	CR	
R710	QRD14AJ-153	CR	
R711	QRD14AJ-332	CR	
R712	QRD14AJ-223	CR	
VR02	PU59085-27	VR	1 kΩ
VR701	PU59085-28	VR	10 kΩ
TH01	PU59085-26	Thermistor	5.6Ω
C01	QFZ9022-473	Film Cap	
C02	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C03	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C04	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C05	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C06	QFZ9022-104	Film Cap	
C07	PU59085-3	E Cap	150p/400V
C08	PU59085-4	C Cap	100P
	or PU59085-5	C Cap	
C09	PU59085-6	Film Cap	0.01μ/630V
C10	QETC1EM-476	E Cap	47μ/25V
	or QET41EM-476	E Cap	
C11	QFM41HK-102	Film Cap	
C12	QFM41HK-104	Film Cap	
C13	QETA1HM-225	E Cap	
	or QET41HM-225	E Cap	
C14	—	—	—
C15	PU59085-7	C Cap	0.001μ
	or PU59085-8	C Cap	
C16	PU59085-7	C Cap	0.001μ
	or PU59085-8	C Cap	
C17	PU59085-8	C Cap	330P
	or PU59085-10	C Cap	
C18	PU59085-9	C Cap	330P
	or PU59085-10	C Cap	
C19	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C20	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C21	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C22	PU59085-1	C Cap	0.0022μ
	or PU59085-2	C Cap	
C201	QETC1HM-107	E Cap	
	or QET41HM-107	E Cap	

Symbol No.	Part No.	Part Name	Description
C202	QETC1HM-106	E Cap	
	or QET41HM-106	E Cap	
C301	QETC1JM-476	E Cap	
C401	PU59085-11	E Cap	100μ/25V
C501	QETC1CM-136	E Cap	
C601	PU59085-12	E Cap	2200μ/16V
C602	PU59085-13	E Cap	47μ/25V
C701	PU59085-14	E Cap	
C702	QETC1CM-106	E Cap	
C703	QETC1AM-227	E Cap	
T01	PU59085-23	Main Trans	
T02	PU59085-24	Current Trans	
L01	PU59085-17	Choke Coil	
L201	PU59085-18	Peaking Coil	
L801	PU59085-18	Peaking Coil	
L701	PU59085-18	Peaking Coil	
F01	QMF51E2-3R15	Fuse	
F02	PU59085-15	Thermal Fuse	
	PU59085-16	Fuse Holder	
S1	PU59085-25	Switch	
	QMP3980-200	Power Cord	
	PU59085-52	Switch Cover	
	PU59085-31	Fuse Holder	
	PU58915	Ring Core	
	QHS3771-108	Strain Relief	
	PU59085-30	Heat Sink	for Q01
	PU59085-33	Heat Sink	for Q101,601
	PU59085-56	Screw	701,D601
	PU59085-59	Screw	Heat Sink
	PU59085-53	Cover	Fuse Holder
	PU59085-54	Cover	Large
	PU59110	Spacer	Small

6.2.2 Video/servo board assembly [02] PU11319F

-Servo section-

Symbol No.	Part No.	Part Name	Description
IC1	M51795P	Integrated Circuit	
IC2	BU2710SA	Integrated Circuit	
IC3	M5236L	Integrated Circuit	
IC4	IR3702	Integrated Circuit	
	or UPC324C	Integrated Circuit	
IC5	UPD4013BC	Integrated Circuit	
△ IC6	TC40H000P	Integrated Circuit	
Q1	2SD636Q,R,S	Transistor	
Q2	2SD636Q,R,S	Transistor	
Q3	DTC144EF	D Transistor	
Q4	DTC144EF	D Transistor	
Q5	DTC144EF	D Transistor	
Q6	DTA144EF	D Transistor	
Q7	DTA144EF	D Transistor	
Q8	DTC144EF	D Transistor	
Q9	UN4112	D Transistor	
Q10	2SD636Q,R,S	Transistor	
Q11	2SB643Q,R,S	Transistor	
Q12	2SD636Q,R,S	Transistor	
Q13	2SB641Q,R,S	Transistor	
Q14	2SD636Q,R,S	Transistor	
Q15	2SB641Q,R,S	Transistor	
Q16	2SD636Q,R,S	Transistor	
Q17	DTA144EF	D Transistor	
Q18	DTC144EF	D Transistor	
Q19	DTC144EF	D Transistor	
D1	DA203	Diode Array	
D2	1SS133	Diode	
D3	1SS133	Diode	
D4	—	—	
D5	1SS133	Diode	
D6	DAP201	Diode Array	
D7	RD5.1EB3	Zener Diode	
D8	RD12EB2	Zener Diode	
D9	1SS133	Diode	
D10	MA160	Diode	
D11	1SS133	Diode	
D12	1SS133	Diode	
R1	QRD161J-102	CR	
R2	QRD161J-392	CR	
R3	QRD161J-564	CR	
R4	QRD161J-563	CR	
R5	QRD161J-105	CR	
R6	QRD161J-153	CR	
R7	QRD161J-105	CR	
R8	QRD161J-102	CR	
R9	QRD161J-102	CR	
R10	QRD161J-471	CR	
R11	QRD161J-474	CR	
R12	QRD161J-332	CR	
R13	QRD161J-104	CR	
R14	QRD161J-564	CR	
R15	QRD161J-473	CR	
R16	QRD161J-184	CR	
R17	QRD161J-333	CR	

Symbol No.	Part No.	Part Name	Description
R18	QRD161J-333	CR	
R19	QRD161J-103	CR	
R20	QRD161J-394	CR	
R21	QRD161J-103	CR	
R22	QRD162J-103	CR	
R23	QRD161J-103	CR	
R24	—	—	
R25	QRD161J-103	CR	
R26	QRD161J-153	CR	
R27	QRD161J-103	CR	
R28	—	—	
R29	QRD161J-561	CR	
R30	QRD161J-472	CR	
R31	QRD161J-104	CR	
R32	QRD161J-104	CR	
R33	QRD161J-104	CR	
R34	QRD161J-104	CR	
R35	QRD161J-683	CR	
R36	QVZ3518-334	VR	NTSC SW
R37	QVZ3518-104	VR	PAL SW
R38	QRD161J-153	CR	
R39	QRD161J-103	CR	
R40	QRD161J-472	CR	
R41	QRD161J-103	CR	
R42	QRD161J-103	CR	
R43	QRD161J-472	CR	
R44	QRD161J-101	CR	
R45	QRD161J-333	CR	
R46	QRD161J-103	CR	
R47	QRD161J-332	CR	
R48	QRD161J-683	CR	
R49	QRD161J-105	CR	
R50	QRD161J-223	CR	
R51	QRD161J-564	CR	
R52	QRD161J-105	CR	
R53	QRD161J-393	CR	
R54	QRD161J-474	CR	
R55	QRD161J-823	CR	
R56	QRD161J-684	CR	
R57	QRD161J-472	CR	
R58	QRD161J-333	CR	
R59	QRD161J-105	CR	
R60	QRD161J-103	CR	
R61	QVZ3521-104	VR	V LOCK STILL
R62	QRD161J-393	CR	
R63	QRD161J-101	CR	
R64	QRD161J-103	CR	
R65	QRD161J-222	CR	
R66	QRD161J-473	CR	
R67	—	—	
R68	QRD161J-473	CR	
R69	QRD161J-222	CR	
R70	QRD161J-103	CR	
R71	—	—	
△ R72	PU52108-1R0	Posistor	
R73	QRD161J-473	CR	
R74	QRD161J-223	CR	
R75	QRD161J-103	CR	
R76	QRD161J-472	CR	
R77	QRD161J-472	CR	
R78	QRD161J-184	CR	
R79	QRD161J-473	CR	

(Servo)

Symbol No.	Part No.	Part Name	Description
C1	QCF31HP-102	C Cap	
C2	QCF31HP-102	C Cap	
C3	QCS31HJ-221	C Cap	
C4	QFN31HK-393	MY Cap	
C5	QEK61CM-106	E Cap	
C6	QCS31HJ-101	C Cap	
C7	QET61CM-106	E Cap	
C8	QET61CM-476	E Cap	
C9	QCS31HJ-681	C Cap	
C10	QEK61HM-105	E Cap	
C11	—	—	
C12	QER61CM-106	E Cap	
C13	QCF31HP-102	C Cap	
C14	QCF31HP-102	C Cap	
C15	QER61CM-106	E Cap	
C16	QER61CM-336	E Cap	
C17	—	—	
C18	QCF31HP-102	C Cap	
C19	QFN31HK-223	MY Cap	
C20	QCS31HJ-101	C Cap	
C21	QET61HM-105	E Cap	
C22	QET61CM-476	E Cap	
C23	QCS31HJ-101	C Cap	
C24	—	—	
C25	QCS31HJ-101	C Cap	
C26	—	—	
C27	QFN31HJ-223	MY Cap	
C28	—	—	
C29	QFN31HJ-124	MY Cap	
C30	QCF31HP-102	C Cap	
C31	QEK61CM-106	E Cap	
C32	QFN31HJ-123	MY Cap	
C33	QFN31HJ-122	MY Cap	
C34	QFN31HJ-222	MY Cap	
C35	QCS31HJ-561	C Cap	
C36	QCS31HJ-470	C Cap	
C37	QCS31HJ-470	C Cap	
C38	QCF31HP-103	C Cap	
C39	QCF31HP-103	C Cap	
C40	QCF31HP-103	C Cap	
C41	QCS31HJ-151	C Cap	
C42	QFN31HK-104	MY Cap	
C43	QET61CM-106	E Cap	
C44	QEK61CM-106	E Cap	
C45	QEN61HM-475	NP Cap	
C46	QFN31HK-184	MY Cap	
C47	QFN31HK-472	MY Cap	
C48	QEP61HM-106	NP Cap	
C49	QET61CM-106	E Cap	
C50	QET61HM-225	E Cap	
C51	QET61CM-106	E Cap	
C52	QET61HM-225	E Cap	
C53	QET61CM-106	E Cap	
C54	QET61CM-106	E Cap	
C55	QCS31HJ-470	C Cap	
C56	QCS31HJ-470	C Cap	
C57	QET61HM-224	E Cap	
C58	QFN31HK-473	MY Cap	
C59	QFN31HK-683	MY Cap	
C60	QEK61CM-106	E Cap	

Symbol No.	Part No.	Part Name	Description
L1	PU48530-100J	Peaking Coil	
Δ X1	PU58217-4	Crystal	
Δ X2	PU58217	Crystal	
CN1	PU49215-2	Cap Housing	
CN2	PU49215-2	Cap Housing	
CN3	PU49215-8	Cap Housing	
CN4	PU49215-5	Cap Housing	
CN5	PU49215-111	Cap Housing	
CN6	PU49215-4	Cap Housing	
TP	PU57546	Test Pin	TP1,2,6,11,22

—Video (Luminance) section —

Symbol No.	Part No.	Part Name	Description
IC401	M5223L	Integrated Circuit	
IC402	LC4001B	Integrated Circuit	
△IC403	LM6416E-135	Integrated Circuit	
IC404	AN6392	Integrated Circuit	
IC405	PU22199A	Y Mod. PWB Ass'y	
IC406	TC40663P	Integrated Circuit	
IC407	M5236L	Integrated Circuit	
IC408	AN3310K	Integrated Circuit	
IC409	H8D1936	Integrated Circuit	
Q401	DTA114EF	D Transistor	
Q402	DTC114EF	D Transistor	
Q403	2SB643R,S	Transistor	
Q404	2SB643R,S	Transistor	
Q405	2SB643R,S	Transistor	
Q406	DTC114EF	D Transistor	
Q407	2SB911MQ,R	Transistor	
Q408	2SB643R,S	Transistor	
Q409	2SB643R,S	Transistor	
Q410	DTC114EF	D Transistor	
Q411	2SD630R,S	Transistor	
Q412	2SB643R,S	Transistor	
Q413	2SC2021R	Transistor	
Q414	2SB641R,S	Transistor	
Q415	—	—	
Q416	2SC2021R	Transistor	
Q417	DTC124EF	D Transistor	
Q418	DTC114EF	D Transistor	
Q419	2SB641R,S	Transistor	
Q420	2SC2021R	Transistor	
Q421	2SC2021R	Transistor	
Q422	2SB641R,S	Transistor	
Q423	2SB643R,S	Transistor	
Q424	2SB641R,S	Transistor	
Q425	2SC2021R	Transistor	
Q426	DTC114EF	D Transistor	
Q427	2SC2021R	Transistor	
Q428	2SC2021R	Transistor	
Q429	—	—	
Q430	2SC2021R	Transistor	
Q431	—	—	
Q432	2SC2021R	Transistor	
Q433	—	—	
Q434	2SC2021R	Transistor	
Q435	DTC114EF	D Transistor	
Q436	2SB641R,S	Transistor	
Q437	2SC2021R	Transistor	
Q438	DTA114EF	D Transistor	
Q439	2SB641R,S	Transistor	
Q440	DTC124EF	D Transistor	
Q441	DTC124ES	D Transistor	
D401	1SS133	Diode	
D402	1SS133	Diode	
D403	1SS133	Diode	
D404	1SS133	Diode	
D405	1SS133	Diode	
D406	MA150	Diode	

Symbol No.	Part No.	Part Name	Description
D407	1SS133	Diode	
D408	1SS133	Diode	
D409	1SS133	Diode	
D410	1SS133	Diode	
D411	1SS133	Diode	
D412	1SS133	Diode	
D413	1SS133	Diode	
D414	1SS133	Diode	
D415	MA150	Diode	
D416	1SS133	Diode	
D417	1SS133	Diode	
D418	1SS133	Diode	
D419	1SS133	Diode	
D420	1SS133	Diode	
D421	1SS133	Diode	
D422	1SS133	Diode	
D423	1SS133	Diode	
D424	1SS133	Diode	
R401	QRD161J-105	CR	
R402	QRD161J-473	CR	
R403	QRD161J-273	CR	
R404	QRD161J-561	CR	
R405	QRD161J-473	CR	
R406	QRD161J-823	CR	
R407	QRD161J-223	CR	
R408	QRD161J-103	CR	
R409	QRD161J-103	CR	
R410	QRD161J-102	CR	
R411	QRD161J-104	CR	
R412	QRD161J-332	CR	
R413	QRD161J-472	CR	
R414	QRD161J-472	CR	
R415	QRD161J-472	CR	
R416	QRD161J-472	CR	
R417	QRD161J-105	CR	
R418	QRD161J-472	CR	
R419	QRD161J-472	CR	
R420	QRD161J-103	CR	
R421	QRD161J-333	CR	
R422	QRD161J-103	CR	
R423	QRD161J-103	CR	
R424	QRD161J-103	CR	
R425	QRD161J-103	CR	
R426	QRD161J-103	CR	
R427	QRD161J-103	CR	
R428	QRD161J-103	CR	
R429	QRD161J-103	CR	
R430	QRD161J-393	CR	
R431	QRD161J-331	CR	
R432	QRD161J-331	CR	
R433	QRD161J-331	CR	
R434	QRD161J-331	CR	
R435	QRD161J-393	CR	
R436	QRD161J-222	CR	
R437	QRD161J-393	CR	
R438	QRD161J-222	CR	
R439	QRD161J-393	CR	
R440	QRD161J-103	CR	
R441	QRD161J-222	CR	
R442	QRD161J-333	CR	

(Video-Y)

Symbol No.	Part No.	Part Name	Description
R443	QRD161J-393	CR	SV ADJ
R444	QRD161J-102	CR	
R445	QRD161J-393	CR	
R446	QRD161J-103	CR	
R447	QRD161J-222	CR	
R448	QRD161J-333	CR	
R449	QRD161J-272	CR	
R450	QVZ3518-222	VR	
R451	QRD161J-101	CR	
R452	QRD161J-222	CR	
R453	QRD161J-103	CR	REC FM
R454	QRD161J-393	CR	
R455	QRD161J-222	CR	
R456	QRD161J-472	CR	
R457	QRD161J-331	CR	
R458	QRD161J-562	CR	
R459	QRD161J-122	CR	
R460	QRD161J-222	CR	
R461	QRD161J-271	CR	
R462	QRD161J-391	CR	
R463	QRD161J-330	CR	CARRIER
R464	QRD161J-101	CR	
R465	QRD161J-393	CR	
R466	QRD161J-122	CR	
R467	QRD161J-820	CR	
R468	QRD161J-121	CR	
R469	QRD161J-222	CR	
R470	QRD161J-222	CR	
R471	QRD161J-222	CR	
R472	QVZ3518-102	VR	
R473	QRD161J-681	CR	APA CONN
R474	—	—	
R475	—	—	
R476	QRD161J-222	CR	
R477	QRD161J-222	CR	
R478	QRD161J-102	CR	
R479	QRD161J-101	CR	
R480	QRD161J-562	CR	
R481	QRD161J-475	CR	
R482	QRD161J-225	CR	
R483	QRD161J-392	CR	CARRIER
R484	QRD161J-335	CR	
R485	QVZ3518-104	VR	
R486	QRD161J-153	CR	
R487	QRD161J-824	CR	
R488	—	—	
R489	QRD161J-821	CR	
R490	QRD161J-821	CR	
R491	QRD161J-122	CR	
R492	QRD161J-122	CR	
R493	QRD161J-332	CR	CARRIER
R494	QRD161J-391	CR	
R495	QRD161J-273	CR	
R496	QRD161J-272	CR	
R497	QRD161J-181	CR	
R498	QRD161J-221	CR	
R499	QRD161J-182	CR	
R500	QRD161J-331	CR	
R501	QRD141J-391	CR	
R502	QRD161J-102	CR	
R503	QRD161J-102	CR	

Symbol No.	Part No.	Part Name	Description
R504	QRD161J-222	CR	CARRIER
R505	QRD161J-750	CR	
R506	QRD161J-822	CR	
R507	QRD161J-223	CR	
R508	QRD161J-222	CR	
R509	QRD162J-103	CR	
R510	QRD161J-103	CR	
R511	—	—	
R512	QRD161J-221	CR	
R513	QRD161J-821	CR	
R514	QRD161J-391	CR	CARRIER
R515	QRD161J-222	CR	
R516	QRD161J-273	CR	
R517	QRD161J-273	CR	
R518	QRD161J-122	CR	
R519	—	—	
R520	QRD161J-122	CR	
R521	QRD161J-122	CR	
R522	—	—	
R523	QRD161J-102	CR	CARRIER
R524	QRD161J-102	CR	
R525	QRD161J-821	CR	
R526	QRD162J-561	CR	
R527	QRD161J-152	CR	
R528	—	—	
R529	QRD161J-684	CR	
R530	QRD161J-182	CR	
R531	QRD161J-681	CR	
R532	QRD161J-272	CR	
R533	QRD161J-332	CR	CARRIER
R534	—	—	
R535	—	—	
R536	QRD161J-102	CR	
R537	—	—	
R538	QRD161J-472	CR	
R539	QVZ3518-473	VR	
R540	—	—	
R541	QRD161J-101	CR	
R542	QRD161J-272	CR	
R543	QRD161J-332	CR	CARRIER
R544	—	—	
R545	QRD161J-680	CR	
△ TH401	ERT-D2FGL-101S	Thermistor	
RA401	EXB-P84472M	Resistor Array	
RA402	EXB-P84103M	Resistor Array	
C401	QET61CM-106	E Cap	
C402	QET61CM-106	E Cap	
C403	QFN31HJ-103	MY Cap	
C404	QFN31HJ-222	MY Cap	
C405	QFN31HJ-222	MY Cap	CARRIER
C406	QCS31HJ-391	C Cap	
C407	QCVB1CN-103	C Cap	
C408	QCS31HJ-221	C Cap	
C409	QCB81HJ-221	C Cap	
C410	QET61EM-475	E Cap	
C411	QCVB1CN-103	C Cap	
C412	QET61CM-106	E Cap	

(Video-Y)

Symbol No.	Part No.	Part Name	Description
C413	QER61CM-106	E Cap	
C414	QFN31HJ-104	MY Cap	
C415	QER61CM-476	E Cap	
C416	QCF31HP-103	C Cap	
C417	QCS31HJ-680	C Cap	
C418	QCS31HJ-120	C Cap	
C419	QCS31HJ-330	C Cap	
C420	QCS31HJ-151	C Cap	
C421	QCS31HJ-330	C Cap	
C422	QET61HM-105	E Cap	
C423	QCF31HP-103	C Cap	
C424	QEK61AM-476	E Cap	
C425	QCF31HP-103	C Cap	
C426	QET61HM-105	E Cap	
C427	QCS31HJ-220	C Cap	
C428	QCF31HP-103	C Cap	
C429	QCF31HP-103	C Cap	
C430	QCF31HP-103	C Cap	
C431	QCF31HP-103	C Cap	
C432	QCS31HJ-121	C Cap	
C433	QCS31HJ-121	C Cap	
C434	QET61CM-106	E Cap	
C435	QCS31HJ-151	C Cap	
C436	QCS31HJ-330	C Cap	
C437	QCV81CN-103	C Cap	
C438	QEM51AK-107	E Cap	
C439	QCF31HP-223	C Cap	
C440	QET61HM-105	E Cap	
C441	QET61HM-105	E Cap	
C442	QET61HM-105	E Cap	
C443	—	—	
C444	QET60JM-107	E Cap	
C445	QET60JM-107	E Cap	
C446	QER61EM-335	E Cap	
C447	QER61CM-226	E Cap	
C448	QER61HM-225	E Cap	
C449	QER61EM-335	E Cap	
C450	QER61EM-335	E Cap	
C451	QER61EM-475	E Cap	
C452	—	—	
C453	QER60JM-476	E Cap	
C454	QER60JM-476	E Cap	
C455	QER61CM-106	E Cap	
C456	QCF31HP-103	C Cap	
C457	QET61EM-475	E Cap	
C458	QET60JM-476	E Cap	
C459	QET40JM-108	E Cap	
C460	QET61CM-106	E Cap	
C461	QET61CM-476	E Cap	
C462	QCF31HP-103	C Cap	
C463	QET61CM-106	E Cap	
C464	QET60JM-476	E Cap	
C465	QCF31HP-103	C Cap	
C466	—	—	
C467	QCF31HP-103	C Cap	
C468	QER61HM-105	E Cap	
C469	—	—	
C470	QCF31HP-103	C Cap	
C471	—	—	
C472	QCF31HP-103	C Cap	
C473	—	—	

Symbol No.	Part No.	Part Name	Description
C474	—	—	
C475	QEK61HM-105	E Cap	
C476	QEK61HM-105	E Cap	
C477	QCS31HJ-470	C Cap	
C478	QCS31HJ-220	C Cap	
C479	QEK61HM-474	E Cap	
C480	QEK61HM-104	E Cap	
C481	QCF31HP-103	C Cap	
C482	QCF31HP-103	C Cap	
C483	QCF31HP-103	C Cap	
C484	QCV81CN-103	C Cap	
C485	QEK61HM-104	E Cap	
C486	QEK41HM-104	E Cap	
C487	QCF11HP-223	C Cap	
C488	QEE51VM-224	T Cap	
C489	QCF31HP-103	C Cap	
C490	QEK60JM-476	E Cap	
C491	—	—	
C492	QCS31HJ-220	C Cap	
C493	QCS81HJ-180	C Cap	
C494	QCS81HK-389K	C Cap	
C495	QCS31HJ-121	C Cap	
C496	—	—	
C497	—	—	
C498	QCF31HP-103	C Cap	
C499	QET60JM-336	E Cap	
C500	QCF31HP-223	C Cap	
C501	QCF31HP-223	C Cap	
C502	QCS31HJ-330	C Cap	
C503	QET61CM-106	E Cap	
C504	QCS11HJ-680	C Cap	
C505	QCS11HJ-270	C Cap	
L401	PU48530-101J	Peaking Coil	
L402	PU48530-101J	Peaking Coil	
L403	PU48530-120J	Peaking Coil	
L404	PU48530-330J	Peaking Coil	
L405	PU48530-470J	Peaking Coil	
L406	PU48530-8R2J	Peaking Coil	
L407	PU48530-221J	Peaking Coil	
L408	PU48530-680J	Peaking Coil	
L409	PU48530-101J	Peaking Coil	
L410	PU48530-180J	Peaking Coil	
L411	PU48530-180J	Peaking Coil	
L412	PU48530-121J	Peaking Coil	
L413	PU48530-101J	Peaking Coil	
L414	PU48530-121J	Peaking Coil	
L415	PU48530-101J	Peaking Coil	
L416	PU48530-101J	Peaking Coil	
L417	—	—	
L418	PU48530-470J	Peaking Coil	
L419	PU48530-680J	Peaking Coil	
L420	PU48530-101J	Peaking Coil	
L421	PU48530-471J	Peaking Coil	
L422	PU48530-470J	Peaking Coil	
L423	PU48530-270J	Peaking Coil	
T401	PU58606	Trap	

— Video (Colour) section —

Symbol No.	Part No.	Part Name	Description
CF401	PU54080	Ceramic Filter	
LPF401	PU58608	Low Pass Filter	
LPF402	PU58607-2	Low Pass Filter	
DL401	PGZ00149	1H Delay Line	
EQ401	PU54838	Equalizer	
CN401	—	—	
CN402	PU49215-5	Cap Housing	
CN403	—	—	
CN404	PU49215-8	Cap Housing	
CN405	PU49215-5	Cap Housing	
CN406	PU49215-8	Cap Housing	
CN407	PU49215-7	Cap Housing	
TP	PU57545	Test Pin	TP403,404,406 410,425—427

Symbol No.	Part No.	Part Name	Description
IC801	—	—	
IC602	TC4066BP	Integrated Circuit	
IC603	PU22046A	C Mod. PWB As's'y	
IC604	TC4066BP	Integrated Circuit	
IC605	BA7007	Integrated Circuit	
IC606	BA7007	Integrated Circuit	
IC607	TC4088BP	Integrated Circuit	
IC608	M51645P	Integrated Circuit	
IC609	AN608P	Integrated Circuit	
Q601	2SC2021R	Transistor	
Q602	2SC2021R	Transistor	
Q603	DTC124EF	D Transistor	
Q604	2SC2021R	Transistor	
Q605	2SC2021R	Transistor	
Q606	DTC124EF	D Transistor	
Q607	DTC124EF	D Transistor	
Q608	DTC124EF	D Transistor	
Q609	2SC2021R	Transistor	
Q610	2SC2021R	Transistor	
Q611	DTC124EF	D Transistor	
Q612	2SC2021R	Transistor	
Q613	2SC2021R	Transistor	
Q614	2SC2021R	Transistor	
Q615	DTC124EF	D Transistor	
Q616	2SC2021R	Transistor	
Q617	2SC2021R	Transistor	
Q618	DTC124EF	D Transistor	
Q619	DTC124EF	D Transistor	
Q620	2SC2021R	Transistor	
Q621	2SC2021R	Transistor	
Q622	DTA124EF	D Transistor	
Q623	DTC124EF	D Transistor	
Q624	DTA124EF	D Transistor	
Q625	2SB641R,S	Transistor	
Q626	DTA124EF	D Transistor	
Q627	DTC124EF	D Transistor	
Q628	2SB641R,S	Transistor	
Q629	DTC124ES	D Transistor	
Q630	DTA124ES	D Transistor	
Q631	2SC1740Q,R,S	Transistor	
Q632	2SC829C	Transistor	
Q633	DTC114EF	D Transistor	
Q634	DTC114ES	D Transistor	
Q635	DTC114ES	D Transistor	
Q636	DTC114EF	D Transistor	
D601	1SS133	Diode	
D602	—	—	
D603	1SS133	Diode	
D604	MA150	Diode	
D605	1SS133	Diode	
D606	1SS133	Diode	
D607	1SS133	Diode	
D608	1SS133	Diode	
D609	1SS133	Diode	
D610	1SS133	Diode	
D611	MA150	Diode	
D612	1SS99	Diode	
D613	1SS99	Diode	

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Symbol No.	Part No.	Part Name	Description
D614	1SS99	Diode	
D616	1SS99	Diode	
D616	1SS133	Diode	
D617	1SS133	Diode	
D618	—	—	
D619	1SS133	Diode	
D620	1SS133	Diode	
D621	1SS133	Diode	
D622	1SS133	Diode	
D623	1SS133	Diode	
D624	1SS133	Diode	
D625	1SS133	Diode	
D626	1SS133	Diode	
D627	1SS133	Diode	
R601	QRD161J-102	CR	
R602	QRD161J-103	CR	
R603	QRD161J-681	CR	
R604	QRD161J-102	CR	
R605	QRD161J-332	CR	
R606	QRD161J-333	CR	
R607	QRD161J-272	CR	
R608	QRD161J-681	CR	
R609	QRD161J-473	CR	
R610	QRD161J-102	CR	
R611	QRD161J-102	CR	
R612	QRD161J-221	CR	
R613	QRD161J-273	CR	
R614	QRD161J-273	CR	
R615	QRD161J-101	CR	
R616	QRD161J-273	CR	
R617	QRD161J-273	CR	
R618	QRD161J-103	CR	
R619	QRD161J-472	CR	
R620	QRD161J-222	CR	
R621	QRD161J-383	CR	
R622	QRD161J-103	CR	
R623	QRD161J-182	CR	
R624	QRD161J-272	CR	
R625	QRD161J-182	CR	
R626	QRD161J-101	CR	
R627	QVZ3518-471	VR	PAL REC COL
R628	QRD161J-122	CR	
R629	QRD161J-472	CR	
R630	QRD161J-274	CR	
R631	QVZ3518-223	VR	VXO
R632	QRD161J-221	CR	
R633	QRD161J-391	CR	
R634	QRD161J-393	CR	
R635	QRD161J-122	CR	
R636	QRD161J-471	CR	
R637	QRD161J-561	CR	
R638	QRD161J-563	CR	
R639	QRD161J-333	CR	
R640	QRD161J-393	CR	
R641	QRD161J-562	CR	
R642	QRD161J-102	CR	
R643	QRD161J-122	CR	
R644	QRD161J-471	CR	
R645	QRD161J-272	CR	
R646	QRD161J-471	CR	
R647	QRD161J-152	CR	
R648	QRD161J-223	CR	
R649	QRD161J-682	CR	
R650	QRD161J-102	CR	
R651	QRD161J-271	CR	
R652	QRD161J-681	CR	
R653	QRD161J-273	CR	
R654	QRD161J-273	CR	
R655	QRD161J-101	CR	
R656	QRD161J-273	CR	
R657	QRD161J-103	CR	
R658	QRD161J-273	CR	
R659	QRD161J-562	CR	
R660	QRD161J-154	CR	
R661	QRD161J-102	CR	
R662	QRD161J-393	CR	
R663	QRD161J-182	CR	
R664	QVZ3518-472	VR	MESECAM DET
R665	QRD161J-103	CR	
R666	QRD161J-154	CR	
R667	QRD161J-563	CR	
R668	QRD161J-182	CR	
R669	QRD161J-103	CR	
R670	QRD161J-333	CR	
R671	QVZ3518-472	VR	SECAM DET
R672	QRD161J-562	CR	
R673	QRD161J-103	CR	
R674	QRD161J-102	CR	
R675	QRD161J-682	CR	
R676	QRD161J-393	CR	
R677	QRD161J-223	CR	
R678	QRD161J-331	CR	
R679	QRD161J-821	CR	
R680	QRD161J-102	CR	
R681	QRD161J-222	CR	
R682	QRD161J-472	CR	
R683	QRD162J-102	CR	
R684	QRD161J-102	CR	
R685	QRD161J-102	CR	
R686	QRD161J-101	CR	
R687	QVZ3518-221	VR	SECAM REC COLOUR
R688	QRD161J-102	CR	
R689	QRD161J-224	CR	
R690	QRD161J-224	CR	
R691	QRD161J-221	CR	
R692	QRD161J-682	CR	
R693	QRD161J-392	CR	
R694	QRD161J-681	CR	
R695	QRD161J-271	CR	
R696	—	—	
R697	QRD161J-122	CR	
R698	QRD161J-822	CR	
R699	QRD161J-122	CR	
R700	QRD161J-822	CR	
R701	QRD161J-102	CR	
R702	QRD161J-102	CR	
R703	QRD161J-203	CR	
R704	QRD161J-274	CR	
R705	QRD161J-472	CR	
R706	QRD161J-472	CR	
R707	QRD161J-122	CR	

Symbol No.	Part No.	Part Name	Description
R708	QRD161J-881	CR	NTSC REC COL
R709	QRD161J-273	CR	
R710	QRD161J-101	CR	
R711	QRD161J-273	CR	
R712	QRD161J-273	CR	
R713	QRD161J-473	CR	
R714	QRD161J-162	CR	
R715	QRD161J-473	CR	
R716	QRD161J-474	CR	
R717	QRD161J-224	CR	
R718	QRD161J-101	CR	
R719	QRD161J-102	CR	
R720	QRD161J-473	CR	
R721	QRD161J-391	CR	
R722	QRD161J-103	CR	
R723	QRD161J-473	CR	
R724	QRD161J-823	CR	
R725	QRD161J-681	CR	
R726	QVZ3518-331	VR	
R727	QRD161J-102	CR	
R728	—	—	
R729	—	—	
R730	—	—	
R731	QRD161J-684	CR	
R732	QRD161J-392	CR	
R733	QRD162J-473	CR	
R734	QRD161J-823	CR	
R735	—	—	
R736	QRD161J-103	CR	
R737	—	—	
R738	QRD161J-332	CR	
R739	QRD161J-222	CR	
R740	QRD161J-392	CR	
R741	QRD161J-681	CR	
R742	—	—	
R743	QRD161J-333	CR	
R744	QRD161J-333	CR	
R745	QRD161J-393	CR	
R746	QRD161J-163	CR	
R747	QRD161J-472	CR	
R748	QRD161J-273	CR	
R749	QRD161J-664	CR	
R750	—	—	
R751	QRD161J-392	CR	
R752	—	—	
R753	—	—	
R754	QRD161J-684	CR	
R755	QRD161J-182	CR	
R756	—	—	
R757	QRD161J-272	CR	
R758	QRD161J-223	CR	
R759	QRD161J-821	CR	
R760	QRD161J-331	CR	
R761	QRD161J-103	CR	
R762	QRD161J-103	CR	
R763	QRD161J-103	CR	
R764	QRD161J-DR0	CR	
C801	QCF31HP-103	C Cap	
C802	QCF31HP-103	C Cap	
C803	QCSB1HJ-470	C Cap	
C804	—	—	
C805	QCF31HJ-103	C Cap	

Symbol No.	Part No.	Part Name	Description
C806	—	—	
C807	—	—	
C808	QFN31HJ-473	MY Cap	
C809	QEK61CM-106	E Cap	
C810	QCF31HP-223	C Cap	
C811	QET61CM-106	E Cap	
C812	QCF31HP-223	C Cap	
C813	QFN31HJ-223	MY Cap	
C814	QER61CM-106	E Cap	
C815	—	—	
C816	QET61HM-225	E Cap	
C817	QET61HM-105	E Cap	
C818	QET61HM-105	E Cap	
C819	QET60JM-107	E Cap	
C820	GET61EM-475	E Cap	
C821	QCF31HP-223	C Cap	
C822	QET61EM-335	E Cap	
C823	QFN31HJ-473	MY Cap	
C824	QFN31HJ-332	MY Cap	
C825	QET61CM-106	E Cap	
C826	QFN31HJ-563	MY Cap	
C827	QCF31HP-103	C Cap	
C828	QCF31HP-103	C Cap	
C829	QCF31HP-103	C Cap	
C830	QCF31HP-102	C Cap	
C831	QCS31HJ-100	C Cap	
C832	QET60JM-476	E Cap	
C833	QCF31HP-223	C Cap	
C834	QET61CM-476	E Cap	
C835	QET61AM-336	E Cap	
C836	QFN31HJ-182	MY Cap	
C837	QFN31HJ-182	MY Cap	
C838	QFN31HJ-223	MY Cap	
C839	QET61CM-106	E Cap	
C840	QCVB1CN-103	C Cap	
C841	QET61CM-476	E Cap	
C842	QET61AM-336	E Cap	
C843	QFN31HJ-272	MY Cap	
C844	QFN31HJ-182	MY Cap	
C845	QFN31HJ-223	MY Cap	
C846	QET61CM-106	E Cap	
C847	QCF31HP-103	C Cap	
C848	QCF31HP-223	C Cap	
C849	QET61CM-106	E Cap	
C850	QET60JM-476	E Cap	
C851	QET61JM-475	E Cap	
C852	QCF11HP-103	C Cap	
C853	QCF31HP-103	C Cap	
C854	QCF31HP-103	C Cap	
C855	—	—	
C856	QCF31HP-103	C Cap	
C857	QCF31HP-103	C Cap	
C858	QCT25CH-220	C Cap	
C859	QCF31HP-223	C Cap	
C860	QCF31HP-223	C Cap	
C861	QFN31HJ-222	MY Cap	
C862	QCF31HP-223	C Cap	
C863	QCF31HP-223	C Cap	
C864	QET60JM-107	E Cap	
C865	QET61CM-106	E Cap	
C866	QCS31HJ-4R0	C Cap	

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Symbol No.	Part No.	Part Name	Description
C667	QCF31HP-223	C Cap	
C668	QCF31HP-223	C Cap	
C669	QCF31HP-223	C Cap	
C670	QCVB1CN-103	C Cap	
C671	QCF31HP-223	C Cap	
C672	QCF31HP-223	C Cap	
C673	QFN31HJ-104	MY Cap	
C674	QET61CM-106	E Cap	
C675	QET61CM-106	E Cap	
C676	QCS31HJ-271	C Cap	
C677	QCS31HJ-271	C Cap	
C678	QCF31HP-223	C Cap	
C679	QCVB1CN-103	C Cap	
C680	QCVB1CN-103	C Cap	
C681	QCVB1CN-103	C Cap	
C682	QCVB1CN-103	C Cap	
C683	QET61CM-106	E Cap	
C684	QCF11HP-223	C Cap	
C685	QET61CM-106	E Cap	
C686	QCF31HP-223	C Cap	
C687	QET61CM-106	E Cap	
C688	QCS31HJ-391	C Cap	
C689	QCT25CH-220	C Cap	
C690	QCF31HP-223	C Cap	
C691	QCS11HJ-221	C Cap	
C692	QET61CM-106	E Cap	
C693	QCS31HJ-180	C Cap	
C694	—	—	
C695	QCF31HP-223	C Cap	
C696	QET61HM-105	E Cap	
C697	—	—	
C698	QCF31HP-103	C Cap	
C699	QCF31HP-223	C Cap	
C700	QCF31HP-223	C Cap	
C701	QET61CM-106	E Cap	
C702	QCF31HP-103	C Cap	
C703	QCF11HP-223	C Cap	
C704	QFN41HJ-102	MY Cap	
C705	QCF11HP-103	C Cap	
C706	QFZ9011-224	M Cap	
C707	QEK40JM-336	E Cap	
C708	QCF11HP-223	C Cap	
C709	QCS11HJ-271	C Cap	
C710	QET41EM-475	E Cap	
C711	QET61EM-475	E Cap	
C712	QCS11HJ-101	C Cap	
L601	—	—	
L602	PU48530-222J	Peaking Coil	
L603	PU48530-101J	Peaking Coil	
L604	PU48530-101J	Peaking Coil	
L605	PU47051-622	Coil	
L606	PU48530-150J	Peaking Coil	
L607	PU48530-150J	Peaking Coil	
L608	PU48530-560J	Peaking Coil	
L609	PU47051-562	Coil	
L610	PU48530-101J	Peaking Coil	
L611	PU48530-101J	Peaking Coil	
L612	PU47051-562	Coil	

Symbol No.	Part No.	Part Name	Description
L613	PU48530-101J	Peaking Coil	
L614	PU48530-101J	Peaking Coil	
L615	PU48530-101J	Peaking Coil	
T601	PU49057	Trap Coil	
T602	PU57640	Coil	
T603	PU49057	Trap Coil	
T604	PU54439	Coil	
T605	PU54438	Coil	
ΔX601	PU31449-4K	Crystal	
X8601	PU58023	Crystal Block	
CF601	PU56983	Ceramic Filter	
CF602	PU56983	Ceramic Filter	
DL601	PU58605	Delay Line	
DL602	PU58971	2H Delay line	
LPF601	PU58022	Low Pass Filter	
LPF602	PU54988	Low Pass Filter	
BPF601	PU54410-2	Band Pass Filter	
BPF602	PU57072	Band Pass Filter	
BPF603	PU54437-2	Band Pass Filter	
BPF604	PU54421-2	Band Pass Filter	
BPF605	PU54420-2	Band Pass Filter	
DL601	PU58605	Delay Line	
DL602	PU58971	2H Delay Line	
EQ601	PU53501-4	Equalizer	
CN601	PU49218-13	Cap Housing	
TP	PU57545	Test Pin	TP601-605 621,622 GND
HNG1	PU58018-1-2	Board Hinge	
TAB1	A74017	TAB	
SC1	PU58665	Pre Amp Shield (1)	
SC2	PU58666-1-1	Pre Amp Shield (2)	
SC3	PU58667	Pre Amp Shield (3)	
MC1	PU55379	Mini Clamp	
SPC1	PU57215-2	Spacer	
CSN1	PQ42226	Cushion	
CSN2	PQ41594-2	Cushion	

6.2.3 Terminal board assembly [03] PU35921B-1

Symbol No.	Part No.	Part Name	Description
IC1	TA7348P	Integrated Circuit	
Q1	2SC2021Q,R,S	Transistor	
Q2	2SA937D,R,S	Transistor	
Q3	2SC2021Q,R,S	Transistor	
Q4	2SB643R	D Transistor	
D1	HZ7B1L or HZ7B2L or HZ7B3L	Zener Diode Zener Diode Zener Diode	
D2	MA165 or 1SS133	Diode Diode	
D3	MA165 or 1SS133	Diode Diode	
D4	MA165 or 1SS133	Diode Diode	
D5	MA165 or 1SS133	Diode Diode	
D6	MA165 or 1SS133	Diode Diode	
D7	MA165 or 1SS133	Diode Diode	
D8	MA165 or 1SS133	Diode Diode	
D9	MA165 or 1SS133	Diode Diode	
D10	MA165 or 1SS133	Diode Diode	
R1	ORD161J-333	CR	
R2	—	—	
R3	ORD161J-104	CR	
R4	ORD161J-122	CR	
R5	ORD161J-122	CR	
R6	ORD161J-183	CR	
R7	ORD161J-563	CR	
R8	ORD161J-103	CR	
R9	ORD161J-333	CR	
R10	ORD161J-102	CR	
R11	ORD161J-123	CR	
R12	ORD161J-222	CR	
R13	ORD161J-122	CR	
R14	ORD161J-153	CR	
R15	ORD161J-273	CR	
R16	ORD161J-333	CR	
R17	ORD161J-152	CR	
R18	ORD161J-102	CR	
R19	ORD161J-750	CR	
R20	ORD161J-221	CR	
R21	ORD161J-103	CR	
R22	ORD161J-562	CR	
R23	ORD161J-562	CR	
R24	ORD161J-473	CR	
R25	ORD161J-103	CR	
R26	ORD161J-222	CR	
R27	ORD161J-103	CR	
R28	ORD161J-221	CR	
C1	QCF31HP-102	C Cap	

Symbol No.	Part No.	Part Name	Description
C2	QCF31HP-102	C Cap	
C3	QBK61CM-476	E Cap	
C4	QCF31HP-223	C Cap	
C5	QBK61AM-476	E Cap	
C6	QBK61AM-476	E Cap	
C7	QBK61AM-476	E Cap	
L1	PU48530-101K	Peaking Coil	
S1	PU57958	Slide Switch	B/W COLOUR
	PU68013-3	Terminal Board Ass'y	

6.2.4 Tuner/IF board assembly [04] PU11360B1-3

Symbol No.	Part No.	Part Name	Description
△ TNR1	PU34219-B-4	Tuner	
IC1	M5187P	Integrated Circuit	
IC2	M50161-3945P	Integrated Circuit	
IC3	M58653P	Integrated Circuit	
IC4	LA7913	Integrated Circuit	
IC5	LB1214	Integrated Circuit	
IC6	LM339N	Integrated Circuit	
IC7	M5223L	Integrated Circuit	
IC8	H8DN1933B	Integrated Circuit	
IC9	H8DN1933B	Integrated Circuit	
IC10	H8DN1933B	Integrated Circuit	
IC11	H8DN1933A	Integrated Circuit	
IC12	H8DN1929	Integrated Circuit	
IC13	H8D1931B	Integrated Circuit	
IC14	H8D1949	Integrated Circuit	
IC15	H8D1930	Integrated Circuit	
IC16	H8D1928	Integrated Circuit	
IC17	H8D1928	Integrated Circuit	
IC18	LA7016	Integrated Circuit	
IC19	H8D1969	Integrated Circuit	
IC20	LB1214	Integrated Circuit	
IC21	M5223L	Integrated Circuit	
IC22	H8DN1929	Integrated Circuit	
Q1	2SC2636T	Transistor	
Q2	2SC2636T	Transistor	
Q3	2SC2636T	Transistor	
Q4	2SC2636T	Transistor	
Q5	—	—	
Q6	—	—	
Q7	2SC2647C	Transistor	
Q8	2SC2647C	Transistor	
Q9	2SC2647B	Transistor	
Q10	2SC2647C	Transistor	
Q11	2SC2647C	Transistor	
Q12	2SA1254B	Transistor	
Q13	DTC144EF	D Transistor	
Q14	2SD1330S	Transistor	
Q15	2SA1254B	Transistor	
Q16	2SC2647B	Transistor	
Q17	2SD1330S	Transistor	
Q18	2SD638S	Transistor	
Q19	2SB641R	Transistor	
Q20	2SD637R	Transistor	
Q21	2SD637S	Transistor	
Q22	2SC3327A	Transistor	
Q23	2SB641R	Transistor	
Q24	DTC114EF	D Transistor	
Q25	2SB10H,J	Transistor	
Q26	2SB641S	Transistor	
Q27	2SB641Q,R	Transistor	
D1	1SV124	Diode	
D2	1SV124	Diode	
D3	—	—	
D4	—	—	

Symbol No.	Part No.	Part Name	Description
D5	1SV124	Diode	
D6	1SV136	Diode	
D7	1SS162	Diode	
D8	1SS133	Diode	
D9	—	—	
D10	MA840VI	Diode	
D11	1SS133	Diode	
D12	MA840VI	Diode	
D13	1SS133	Diode	
D14	1SS133	Diode	
D15	LTZ-R15	LED	
D16	—	—	
D17	1SS133	Diode	
D18	1SS133	Diode	
D19	1SS133	Diode	
D20	—	—	
D21	—	—	
D22	HZT33-02	Diode	
D23	LTZ-R15	LED	
D24	1SS133	Diode	
D25	DAN201	Diode Array	
D26	—	—	
D27	—	—	
D28	1SS133	Diode	
D29	1SS133	Diode	
R1	QRD161J-750	CR	
R2	QRD161J-472	CR	
R3	QRD161J-222	CR	
R4	QRD161J-221	CR	
R5	QRD161J-221	CR	
R6	QRD161J-151	CR	
R7	QRD161J-101	CR	
R8	QRD161J-220	CR	
R9	QRD161J-151	CR	
R10	QRD161J-361	CR	
R11	—	—	
R12	—	—	
R13	—	—	
R14	QRD161J-751	CR	
△ R15	QRD161J-301	CR	
R16	—	—	
R17	—	—	
R18	—	—	
R19	QRD161J-272	CR	
△ R20	QRD161J-391	CR	
R21	QRD161J-681	CR	
R22	QRD161J-101	CR	
R23	QRD161J-101	CR	
R24	QVZ3531-153	VR	SECAM S TRAP
R25	QVZ3531-153	VR	SECAM S TRAP
R26	QVZ3531-223	VR	PAL S TRAP
R27	QVZ3531-223	VR	PAL S TRAP
R28	—	—	
R29	—	—	
R30	—	—	
R31	QRD161J-103	CR	
R32	QRD161J-333	CR	
R33	QRD161J-223	CR	

(Tuner/IF)

Symbol No.	Part No.	Part Name	Description
R34	QRD161J-103	CR	
R35	QRD161J-124	CR	
R36	QRD161J-224	CR	
R37	—	—	
R38	QRD161J-333	CR	
R39	QRD161J-473	CR	
R40	QRD161J-882	CR	
R41	—	—	
R42	—	—	
R43	QRD161J-332	CR	
R44	QRD161J-332	CR	
Δ R45	QRZ0054-100	FR	
R46	QRD161J-333	CR	
R47	QVZ3531-154	VR	SECAM LOW AFC
R48	QRD161J-562	CR	
R49	QRD161J-472	CR	
R50	QVZ3531-333	VR	SECAM LOW LLD
R51	—	—	
R52	QVZ3531-332	VR	SECAM RF AGC
R53	QRD161J-103	CR	
R54	QRD161J-471	CR	
R55	QRD161J-561	CR	
R56	QRD161J-152	CR	
R57	QRD161J-102	CR	
R58	QVZ3531-332	VR	SECAM Y LEVEL
R59	QRD161J-222	CR	
R60	QVZ3531-103	VR	PAL Y LEVEL
R61	QRD161J-271	CR	
R62	QRD161J-182	CR	
R63	—	—	
R64	QRD161J-382	CR	
R65	QVZ3531-103	VR	PAL RF AGC
R66	—	—	
R67	QRD161J-512	CR	
R68	QRD161J-102	CR	
R69	QRD161J-224	CR	
R70	—	—	
R71	QRD161J-821	CR	
R72	QRD161J-881	CR	
R73	QRD161J-302	CR	
R74	QVZ3531-152	VR	SECAM COL LEV
R75	QRD161J-104	CR	
R76	QVZ3531-472	VR	SECAM SYNC LEV
R77	QRD161J-102	CR	
R78	QRD161J-681	CR	
R79	QRD161J-472	CR	
R80	QVZ3531-103	VR	PAL COL LEV
R81	QRD161J-473	CR	
R82	QVZ3531-472	VR	PAL SYNC LEV
R83	QRD161J-102	CR	
R84	QRD161J-102	CR	
R85	QRD161J-223	CR	
R86	—	—	
R87	QRD161J-243	CR	
R88	QRD161J-393	CR	
R89	QRD161J-470	CR	
R90	QRD161J-511	CR	
R91	QRD161J-391	CR	
R92	QRD161J-391	CR	
R93	QRD161J-242	CR	
R94	QRD161J-102	CR	

Symbol No.	Part No.	Part Name	Description
R95	QRD161J-103	CR	
R96	—	—	
R97	QRD161J-103	CR	
R98	QRD161J-181	CR	
R99	QRD161J-181	CR	
R100	QRD161J-750	CR	
R101	QRD161J-472	CR	
R102	QRD161J-561	CR	
R103	QRD161J-473	CR	
R104	QRD161J-473	CR	
R105	QRD161J-332	CR	
R106	QRD161J-103	CR	
R107	QRD161J-102	CR	
R108	QRD161J-103	CR	
R109	QRD161J-103	CR	
R110	QRD161J-104	CR	
R111	QRD161J-104	CR	
R112	QRD161J-224	CR	
R113	QRD161J-224	CR	
R114	QRD161J-224	CR	
R115	QRD161J-472	CR	
R116	QRD161J-472	CR	
R117	QRD161J-103	CR	
R118	QRD161J-683	CR	
R119	QRD161J-474	CR	
R120	QRD161J-224	CR	
R121	QRD161J-124	CR	
R122	QRD161J-474	CR	
R123	QRD161J-222	CR	
R124	QRD161J-582	CR	
R125	QRD161J-392	CR	
R126	QRD161J-224	CR	
R127	QRD161J-224	CR	
R128	QRD161J-474	CR	
R129	QRD161J-104	CR	
R130	QRD161J-223	CR	
R131	QRD161J-332	CR	
R132	QRD161J-103	CR	
R133	—	—	
R134	—	—	
R135	—	—	
R136	QRD161J-103	CR	
R137	QRD161J-103	CR	
R138	QRD161J-472	CR	
R139	QRD161J-472	CR	
R140	QRD161J-472	CR	
R141	QRD161J-472	CR	
R142	QRD161J-333	CR	
R143	QRD161J-103	CR	
R144	QRD161J-103	CR	
R145	QRD161J-332	CR	
R146	QRD161J-470	CR	
R147	QRD161J-470	CR	
R148	QRD161J-470	CR	
R149	QRD182J-103	CR	
R150	QRD161J-333	CR	
R151	QRD182J-560	CR	
R152	QRD161J-102	CR	
R153	QRD161J-472	CR	
R154	QRD161J-224	CR	
R155	QRD161J-103	CR	

(Tuner/IF)

Symbol No.	Part No.	Part Name	Description
R156	QRD161J-104	CR	
R157	QRD161J-104	CR	
R158	PUS2108-4R7	Posistor	
R159	QRD161J-393	CR	
R160	QRD161J-183	CR	
R161	QRD161J-332	CR	
R162	—	—	
R163	QRD161J-184	CR	
R164	QRD161J-104	CR	
R165	QRD161J-684	CR	
R166	QRD161J-124	CR	
R167	QRD161J-474	CR	
R168	QRD161J-333	CR	
R169	QRD161J-153	CR	
R170	QRD161J-102	CR	
R171	QRD161J-221	CR	
R172	QRD161J-752	CR	
R173	QRD161J-273	CR	
R174	QRD161J-122	CR	
R175	QRD161J-103	CR	
R176	QRD161J-224	CR	
R177	QRD161J-393	CR	
R178	QRD161J-223	CR	
R179	QRD161J-222	CR	
R180	QRD161J-104	CR	
R181	—	—	
R182	—	—	
R183	—	—	
R184	—	—	
R185	QRD161J-471	CR	
RA1	RNBH5A224	R. Network	
RA2	RNBH6A103	Resistor Array	
RA3	RNBH4A333	Resistor Array	
C1	QCY31HK-222	C Cap	
C2	QCF31HP-472	C Cap	
C3	QCY31HK-222	C Cap	
C4	QCY31HK-222	C Cap	
C5	QCF31HP-472	C Cap	
C6	QCT25CH-3R0	C Cap	
C7	QCT25CH-3R0	C Cap	
C8	—	—	
C9	—	—	
C10	QCF31HP-472	C Cap	
C11	QCT25CH-3R0	C Cap	
C12	QCT25CH-3R0	C Cap	
C13	—	—	
C14	—	—	
C15	QCY31HK-222	C Cap	
C16	QCF31HP-472	C Cap	
C17	QCY31HK-222	C Cap	
C18	QCB1HM-222	C Cap	
C19	QCY31HK-222	C Cap	
C20	QCS31HJ-471	C Cap	
C21	QCT25CH-2R0	C Cap	
C22	—	—	
C23	QCY31HK-222	C Cap	

Symbol No.	Part No.	Part Name	Description
C24	QCT25HH-101	C Cap	
C25	QCY31HK-222	C Cap	
C26	QCT25HH-390	C Cap	
C27	QET61HM-474	E Cap	
C28	QET61EM-106	E Cap	
C29	QCS31HJ-470	C Cap	
C30	QCY31HK-222	C Cap	
C31	QCT25CH-120	C Cap	
C32	QET61AM-476	E Cap	
C33	QCY31HK-222	C Cap	
C34	QCY31HK-222	C Cap	
C35	QET61CM-337	E Cap	
C36	QEE41EM-475	T Cap	
C37	QFN31HJ-222	MY Cap	
C38	QET61EM-106	E Cap	
C39	QCS31HJ-580	C Cap	
C40	QET61HM-475	E Cap	
C41	QCS31HJ-270	C Cap	
C42	QET61AM-476	E Cap	
C43	QCS31HJ-470	C Cap	
C44	QCS31HJ-8R0	C Cap	
C45	QET61HM-475	E Cap	
C46	QET61AM-476	E Cap	
C47	QETA1CM-337	E Cap	
C48	QCC11EM-473	C Cap	
C49	—	—	
C50	QET61AM-476	E Cap	
C51	QCS31HJ-180	C Cap	
C52	QCS31HJ-820	C Cap	
C53	QET61AM-476	E Cap	
C54	QET61AM-476	E Cap	
C55	PUS4890-6	E Cap	
C56	QET61HM-105	E Cap	
C57	QET61HM-106	E Cap	
C58	QCS31HJ-271	C Cap	
C59	QET61HM-105	E Cap	
C60	QET61HM-106	E Cap	
C61	QCC11EM-473	C Cap	
C62	QCS31HJ-220	C Cap	
C63	QET61HM-106	E Cap	
C64	QET61HM-105	E Cap	
C65	QET61HM-105	E Cap	
C66	QCS31HJ-330	C Cap	
C67	QCS31HJ-330	C Cap	
C68	QCF31HP-223	C Cap	
C69	QCX11EM-103	C Cap	
C70	QET61CM-107	E Cap	
C71	QET61CM-336	E Cap	
C72	QETA1CM-337	E Cap	
C73	QET61AM-476	E Cap	
C74	QET61HM-106	E Cap	
C75	QET61CM-106	E Cap	
C76	QET61HM-105	E Cap	
C77	QET61CM-106	E Cap	
C78	QEB41CM-665	LL Cap	
C79	QET61CM-106	E Cap	
C80	QEC81CM-106	E Cap	
C81	QET61CM-336	E Cap	
C82	—	—	
C83	QET61CM-336	E Cap	
C84	QCX11EM-153	C Cap	

6.2.5 Mechanism control assembly [05]

..... PU22178D-1

Symbol No.	Part No.	Part Name	Description
C85	QET61CM-107	E Cap	
C86	QET60JM-476	E Cap	
C87	—	—	
C88	QET61CM-336	E Cap	
C89	QET61CM-336	E Cap	
C90	QET61HM-225	E Cap	
C98	QCF11HP-473	C Cap	
L1	—	—	
L2	PU48530-1R0	Peaking Coil	
L3	—	—	
L4	PU48530-1R0	Peaking Coil	
L5	PU57717-3R3	Peaking Coil	
L6	—	—	
L7	PU57717-100J	Peaking Coil	
L8	—	—	
L9	—	—	
L10	PU48530-390J	Peaking Coil	
L11	PU48530-820J	Peaking Coil	
L12	PU48530-470J	Peaking Coil	
L13	PU53618-R22 or PU53223-R22	Peaking Coil Peaking Coil	
T1	PU58763-3	IF Transformer	S. TRAP 1
T2	PU58763-3	IF Transformer	S. TRAP 2
T3	PU58765	IF Transformer	SAW MATCH
T4	PU58766	IF Transformer	PIF
T5	PU51344	IF Transformer	AFC
T6	PU58768	IF Transformer	AFC
T7	PU58769	IF Transformer	SYNC DET
CF1	PU55812	Ceramic Filter	
SAW1	PU34106-2	SAW Filter	
CN1	PU58944-7	Cap Housing	
CN2	PU49215-5	Cap Housing	
CN3	PU49215-2	Cap Housing	
CN4	PU49215-2Y	Cap Housing	
CN5	QMC0131-002	Jack Assembly	
CN6	PU49215-8	Cap Housing	
Δ RF1	PU58024S	RF Converter & Mix Booster	
	PU58991A PU36063-1-1	Shield Case Ass'y (1) Shield Case A'ss'y (2)	

Symbol No.	Part No.	Part Name	Description
Δ IC301	M60730-816SP	Integrated Circuit	
IC302	BA6238A	Integrated Circuit	
Q301	2SD14060,Y	Transistor	
Δ Q302	2SD637R,S	Transistor	
Q303	DTA124EF	D Transistor	
Q304	DTC144EF	D Transistor	
Q305	DTC144EF	D Transistor	
Q306	DTC144EF	D Transistor	
Q307	2SB641R,S	Transistor	
Q308	2SC3243D,E	Transistor	
D301	1SS133	Diode	
D302	1SS133	Diode	
D303	1SS133	Diode	
D304	1SS133	Diode	
D305	1SS133	Diode	
D306	1SS133	Diode	
D307	1SS133	Diode	
D308	1SS133	Diode	
D309	1SS133	Diode	
D310	RD8.2EB2	Zener Diode	
D311	1SS133	Diode	
D312	MA27WA	Diode	
D313	1SS133	Diode	
D314	1SS133	Diode	
D315	RD4.7EB2	Zener Diode	
D316	1SS133	Diode	
D317	RD7.5EB1	Zener Diode	
D318	RD7.5EB2	Zener Diode	
D319	RD6.2EB1	Zener Diode	
D320	1SS133	Diode	
R301	QRD161J-103	CR	
R302	QRD161J-473	CR	
R303	QRD161J-183	CR	
R304	QRD161J-123	CR	
R305	QRD161J-103	CR	
R306	QRD161J-822	CR	
R307	QRD161J-103	CR	
R308	QRD161J-103	CR	
R309	QRD161J-472	CR	
R310	QRD161J-472	CR	
R311	QRD161J-124	CR	
R312	QRD161J-124	CR	
R313	QRD161J-103	CR	
R314	QRD161J-103	CR	
R315	QRD161J-472	CR	
R316	QRD161J-472	CR	
R317	QRD161J-472	CR	
R318	QRD161J-472	CR	
R319	QRD161J-472	CR	
R320	QRD161J-472	CR	
R321	QRD161J-472	CR	
R322	QRD161J-103	CR	
R323	QRD161J-103	CR	
R324	QRD161J-332	CR	
R325	QRD161J-332	CR	
R326	QRD161J-103	CR	

(Mechacon)

Symbol No.	Part No.	Part Name	Description
R327	QRD161J-103	CR	
R328	QRD161J-103	CR	
R329	QRD161J-103	CR	
R330	QRD161J-103	CR	
R331	QRD161J-472	CR	
R332	—	—	
R333	—	—	
R334	QRD161J-272	CR	
R335	QRD161J-223	CR	
R336	QRD161J-473	CR	
R337	QRD161J-473	CR	
R338	QRD161J-103	CR	
R339	QRD161J-103	CR	
R340	QRD161J-472	CR	
R341	QRD161J-106	CR	
R342	QRD161J-472	CR	
R343	QRD161J-472	CR	
R344	QRD161J-331	CR	
R345	QRD161J-152	CR	
R346	QRD161J-222	CR	
R347	QRD161J-103	CR	
R348	QRD161J-561	CR	
R349	—	—	
R350	QRD161J-473	CR	
△ R351	PU62108-100	Posistor	
RA301	EXB-P83472M	Resistor Array	
C301	QCF11HP-223	C Cap	
C302	QET61EM-106	E Cap	
C303	QET61CM-106	E Cap	
C304	QET61CM-336	E Cap	
C305	QCF31HP-223	C Cap	
C306	QCF31HP-223	C Cap	
C307	QCF31HP-223	C Cap	
C308	QCF31HP-223	C Cap	
C309	QCF31HP-102	C Cap	
C310	QCF31HJ-390	C Cap	
C311	QCS31HJ-390	C Cap	
C312	QET61CM-106	E Cap	
C313	QCF31HP-223	C Cap	
C314	QCF31HP-223	C Cap	
C315	QCF31HP-223	C Cap	
C316	QET61CM-336	E Cap	
C317	QET61EM-475	E Cap	
C318	QCF11HP-102	C Cap	
△ CF301	PU56292	Ceramic Filter	
CN301	PU49215-10	Cap Housing	
CN302	PU49215-4	Cap Housing	
CN303	PU49215-11	Cap Housing	
CN304	PU49215-5	Cap Housing	
CN305	PU49215-6	Cap Housing	

Symbol No.	Part No.	Part Name	Description
CN306	PU49215-7	Cap Housing	
CN307	PU49215-8	Cap Housing	
CN308	PU49215-3	Cap Housing	
CN309	PU49215-5	Cap Housing	
CN310	PU49215-3	Cap Housing	
CN311	PU49215-11	Cap Housing	
△ HS301	PU58776	Heat Sink	for Q301
WSR301	Q03083-501	Washer	
SCR301	DPSP3008Z	Screw	

6.2.6 Audio board assembly [06] PU22179A-2

Symbol No.	Part No.	Part Name	Description
IC1	AN3991K	Integrated Circuit	
IC2	TA7361AP	Integrated Circuit	
Q1	2SD636Q,R,S	Transistor	
Q2	DTC124EF	D Transistor	
Q3	2SB643Q,R,S	Transistor	
Q4	2SD636Q,R,S	Transistor	
Q5	2SB643Q,R,S	Transistor	
Q6	—	—	
Q7	DTC124EF	D Transistor	
D1	MA165	Diode	
	or 1SS133	Diode	
D2	MA165	Diode	
	or 1SS133	Diode	
D3	MA165	Diode	
	or 1SS133	Diode	
D4	MA165	Diode	
	or 1SS133	Diode	
D5	MA165	Diode	
	or 1SS133	Diode	
D6	MA165	Diode	
	or 1SS133	Diode	
D7	MA165	Diode	
	or 1SS133	Diode	
D8	MA165	Diode	
	or 1SS133	Diode	
R1	QRD161J-333	CR	
R2	QRD161J-271	CR	
R3	QRD161J-224	CR	
R4	QRD161J-822	CR	
R5	QVZ3521-222	VR	
R6	QRD161J-103	CR	
R7	QRD161J-182	CR	
R8	QRD161J-122	CR	
R9	QRD161J-561	CR	
R10	QRD161J-100	CR	
R11	QRD161J-273	CR	
R12	QRD161J-122	CR	
R13	QRD161J-272	CR	
R14	QRD161J-395	CR	
R15	QRD161J-223	CR	
R16	QRD161J-103	CR	
R17	QRD161J-273	CR	
R18	QRD161J-103	CR	
R19	QRD161J-103	CR	
R20	QRD161J-1R0	CR	
R21	QVZ3521-222	VR	
R22	QRD161J-273	CR	
R23	ORG126J-100	OMR	
	or ORG129J-100	OMR	
R24	QRD161J-272	CR	
R25	QRD161J-393	CR	
R26	QRD161J-222	CR	
Δ R27	PU52108-6R8	Posistor	
Δ	or PU52108-100	Posistor	
R28	QRD161J-182	CR	
R29	QRD161J-182	CR	

Symbol No.	Part No.	Part Name	Description
R30	QRD161J-182	CR	
R31	—	—	
R32	—	—	
R33	QRD161J-272	CR	
R34	QRD161J-393	CR	
R35	QRD161J-153	CR	
R36	QRD161J-560	CR	
R37	QRD161J-272	CR	
C1	QET61AM-476	E Cap	
C2	QCS31HJ-561	C Cap	
C3	QEL61HM-105	E Cap	
C4	QEB61CM-685	LL Cap	
C5	QFN31HJ-153	MY Cap	
C6	QET61EM-475	E Cap	
C7	QET61EM-475	E Cap	
C8	QFN31HJ-473	MY Cap	
C9	QET61HM-105	E Cap	
C10	QCS31HJ-561	C Cap	
C11	QET61CM-336	E Cap	
C12	QET61HM-105	E Cap	
C13	QFN31HJ-123	MY Cap	
C14	QET61AM-228	E Cap	
C15	QET61HM-474	E Cap	
C16	QET61EM-106	E Cap	
C17	QET61AM-336	E Cap	
C18	QET61EM-475	E Cap	
C19	QFN31HJ-182	MY Cap	
C20	QFN31HJ-102	MY Cap	
C21	QFP32AJ-333	PP Cap	
C22	QET61CM-336	E Cap	
C23	QFN31HJ-182	MY Cap	
C24	QFN31HJ-822	MY Cap	
C25	QET61CM-336	E Cap	
C26	QCF11HP-102	C Cap	
C27	QFN31HJ-333	MY Cap	
C28	QCF31HP-473	C Cap	
C29	QFN31HJ-562	MY Cap	
C30	QFN31HJ-124	MY Cap	
L1	PU58308-272J	Coil	
L2	PU48530-561K	Peeking Coil	
L3	PU48530-271J	Coil	
T1	PU58169-2	OSC Coil	
CN1	PU49215-7	Cap Housing	
CN2	PU49215-3	Cap Housing	
CN3	PU49215-3	Cap Housing	
CN4	PU49215-5	Cap Housing	
	PQ42318	Contact	
TP	PU57645	Test Pin	TP1, 31, 32, 35

6.2.7 Tuner/IF Sub board assembly [07] PU11360A2-3

Symbol No.	Part No.	Part Name	Description
IC301	LA7710	Integrated Circuit	
IC302	UPC1391H	Integrated Circuit	
IC303	LB1214	Integrated Circuit	
IC304	LA7016	Integrated Circuit	
IC305	H8D1969	Integrated Circuit	
IC306	H8DN1933B	Integrated Circuit	
IC307	H8D1969	Integrated Circuit	
IC308	H8DN1933B	Integrated Circuit	
IC309	H8D1969	Integrated Circuit	
IC310	H8DN1933B	Integrated Circuit	
Q301	2SC2636T	Transistor	PAL SOUND LEV
Q302	2SC2636T	Transistor	
Q303	2SC2636T	Transistor	
Q304	—	—	
Q305	UN321E	Transistor	
Q306	2SK381C	F.E. Transistor	
Q307	DTC114EF	D Transistor	
Q308	2SD637S	Transistor	
Q309	DTC114YF	D Transistor	
Q310	2SC2647C	Transistor	
Q311	DTC114EF	D Transistor	
Q312	2SD1330S	Transistor	
D301	1SS152	Diode	
D302	1SS152	Diode	
D303	1SS152	Diode	
D304	1SV136	Diode	
D305	1SV136	Diode	
D306	—	—	
D307	1SS152	Diode	
D308	1SV136	Diode	
D309	DAN201	Diode Array	
D310	DAN201	Diode Array	
R301	QRD161J-750	CR	
R302	QRD161J-561	CR	
R303	QRD161J-392	CR	
R304	QRD161J-820	CR	
R305	QRD161J-152	CR	
R306	QRD161J-101	CR	
R307	—	—	
R308	QRD161J-332	CR	
R309	QRD161J-103	CR	
R310	QRD161J-561	CR	
R311	QRD161J-392	CR	PAL SOUND LEV
R312	QRD161J-680	CR	
R313	QRD161J-151	CR	
R314	QRD161J-473	CR	
R315	QRD161J-473	CR	
R316	—	—	
R317	—	—	
R318	QVZ3531-473	VR	
R319	QRD161J-331	CR	
R320	QRD161J-471	CR	
R321	QRD161J-103	CR	SECAM SOUND LEV
R322	QVZ3531-472	VR	
R323	QRD161J-103	CR	

Symbol No.	Part No.	Part Name	Description
R324	QRD161J-392	CR	
R325	QRD161J-473	CR	
R326	QRD161J-105	CR	
R327	QRD161J-472	CR	
R328	QRD161J-681	CR	
R329	QRD161J-681	CR	
R330	QRD161J-222	CR	
R331	QRD182J-621	CR	
R332	QRD161J-621	CR	
R333	QRD161J-271	CR	
R334	QRD161J-391	CR	PAL SOUND LEV
△R335	QRZ0054-470	FR	
R336	QRD161J-272	CR	
R337	QRZ3531-223	VR	
R338	QRD161J-752	CR	
R339	QRD161J-223	CR	
R340	QRD161J-103	CR	
R341	QRD161J-472	CR	
R342	QRD161J-472	CR	
R343	QRD161J-103	CR	
R344	QRD161J-472	CR	
R345	QRD161J-470	CR	
R346	QRD161J-470	CR	
R347	QRD161J-470	CR	
R348	QRD161J-561	CR	
R349	QRD161J-392	CR	
△R350	QRD123J-151	CR	
R351	—	—	
R352	—	—	
R353	QRD161J-220	CR	PAL S BPF PAL S BPF
R354	QVZ3531-473	VR	
R355	QVZ3531-473	VR	
R356	QRD163J-333	CR	
R357	QVZ3531-473	VR	
R358	QVZ3531-473	VR	
R359	QVZ3531-473	VR	
R360	QRD161J-221	CR	
C301	QCY31HK-222	C Cap	
C302	QCY31HK-222	C Cap	
C303	QCF31HP-472	C Cap	
C304	—	—	
C305	QCY31HK-222	C Cap	
C306	QCY31HK-222	C Cap	
C307	QCY31HK-222	C Cap	
C308	QCF31HP-472	C Cap	
C309	QCY31HK-222	C Cap	
C310	QCT25SH-220	C Cap	
C311	QCY31HK-222	C Cap	SECAM S BPF SECAM S BPF SECAM HU LLD
C312	QCT25SH-220	C Cap	
C313	QET61HM-106	E Cap	
C314	QET61HM-105	E Cap	
C315	QET61HM-105	E Cap	
C316	QCY31HK-222	C Cap	
C317	QCT25RH-300	C Cap	
C318	QET61HM-106	E Cap	
C319	QET61AM-476	E Cap	
C320	PU57601-105KE	OS. Cap	
C321	QFN31HK-222	MY Cap	
C322	QET61HM-105	E Cap	
C323	QET61CM-336	E Cap	
C324	QFN31HK-222	MY Cap	

6.2.8 Head/MDA board assembly [08] PU35589C-5

Symbol No.	Part No.	Part Name	Description
C325	QET61CM-107	E Cap	
C326	QCC11EK-473	C Cap	
C327	QCC11EK-473	C Cap	
C328	QFN31HJ-223	MY Cap	
C329	QCX11EM-153	C Cap	
C330	QCS31HJ-220	C Cap	
C331	QET61HM-225	E Cap	
C332	QET61CM-107	E Cap	
C333	—	—	
C334	—	—	
C335	QET61HM-474	E Cap	
C336	QET61HM-474	E Cap	
C337	QCX11EM-153	C Cap	
C338	QET61CM-107	E Cap	
C339	QET61EM-475	E Cap	
C340	QET61HM-225	E Cap	
C341	QCY31HK-222	C Cap	
C342	QCY31HK-222	C Cap	
C343	—	—	
C344	QCT25CH-5R0	C Cap	
C345	QCY31HK-472	C Cap	
C346	—	—	
C347	—	—	
C348	QCT25CH-5R0	C Cap	
L301	PU48530-1R0	Peaking Coil	
L302	PU57717-1R8	Peaking Coil	
L303	PU57837	Low Pass Filter	
CF301	PU58558-2	Ceramic Filter	
CF302	PU49295-2	Ceramic Filter	
CF303	PU32991-2	Ceramic Filter	
SAW301	PU35976	Saw Filter	38.9 MHz
T301	PU58770	IF Transformer	PAL SAW
T302	PU58771	IF Transformer	SECAM BPF
T303	PU58771	IF Transformer	SECAM BPF
T304	PU58773	IF Transformer	LLD DET
CN301	PU49215-8	Cap Housing	
CN302	—	—	
CN303	PU49215-2	Cap Housing	
CN304	PU49215-2R	Cap Housing	
CN305	OMC0131-002	Jack Assembly	
J1	—	—	
J2	PU36069-001	Flat Wire	
J3	PU36069-002	Flat Wire	
J4	PU36069-003	Flat Wire	
J5	PU36069-004	Flat Wire	
J6	PU36069-005	Flat Wire	
SC1	PU36064	Shield Case (3)	
SC2	PU58997-1-2	Shield Plate (3)	
SC3	PU36067	Shield Cover (3)	

Symbol No.	Part No.	Part Name	Description
IC1	AN6671K	Integrated Circuit	
Q1	2SB1052 or 2SB941P.Q	Transistor Transistor	
D1	RD5.1ES-T1B or RD5.1EB or MTZ5.1T-77	Zener Diode Zener Diode Zener Diode	
R1	QRD161J-562	CR	
R2	QRD161J-123	CR	
R3	QRD161J-562	CR	
R4	QRD161J-222	CR	
R5	QRD161J-223	CR	
R6	QRD161J-223	CR	
R7	QRD161J-103	CR	
R8	QRD161J-222	CR	
R9	QRD161J-123	CR	
R10	QRD161J-151	CR	
R11	QRD161J-151	CR	
R12	QRD161J-471	CR	
R13	QRD161J-561	CR	
R14	QRD161J-391	CR	
R15	QRD161J-333	CR	
R16	QRD161J-562	CR	
R17	QRD161J-223	CR	
R18	QRD161J-222	CR	
R19	QRD161J-222	CR	
R20	QRX016J-R68 or QRG016J-R68S	OMR OMR	
R21	QRD161J-222	CR	
C1	QFN31HK-473	MY Cap	
C2	QFN31HK-333	MY Cap	
C3	QFN31HK-473	MY Cap	
C4	QET61HM-225	E Cap	
C5	QET61HM-225	E Cap	
C6	QEK61HM-225	E Cap	
C7	QET61HM-225	E Cap	
C8	QFN31HK-152	MY Cap	
C9	QFZ9011-104 or QFJ41HK-104	MY Cap MY Cap	
C10	QFN31HK-104	MY Cap	
C11	QFN31HK-104	MY Cap	
C12	QET61EM-106	E Cap	
CN1	PU57593-10	Conn Wafer Ass'y	
CN2	PU49215-108	Cap Housing	
CN3	PU49215-105	Cap Housing	
CN4	PU49215-102	Cap Housing	

6.2.9 Audio/ctrl head board [12]

Symbol No.	Part No.	Part Name	Description
	PU58168	A/CTL Head PWB	
CN1	PU54537-5	Cap Housing	
CN2	PU54537-2	Cap Housing	
BRT1	PD41646	Bracket	
SCR1	SPSH1740	Mini Screw	

6.2.10 End sensor board [13]

Symbol No.	Part No.	Part Name	Description
	PU55111	End SENS PWB	
Q1	PT-352V or PN202SR	Photo Transistor Photo Transistor	
C1	QCF11HP-103A	C Cap	

6.2.11 Mode sensor board assembly [14]

..... PU35632A3

Symbol No.	Part No.	Part Name	Description
PS1	PU57650-1-1	Photo Sensor	
R1	QRD161J-561	CR	

6.2.12 Cassette housing board [18]

Symbol No.	Part No.	Part Name	Description
	PU56460-1-2	Cassette Housing Board	
Q1	PT-352V or PN202SR	Photo Transistor	START SENSOR
C1	QCF11HP-103A	C Cap	
C2	QCF11EP-223A	C Cap	
C3	QCF11HP-223A	C Cap	
CN1	PU49215-106	Cap Housing	

6.2.13 Deck terminal board assembly [20]

..... PU35632A1

Symbol No.	Part No.	Part Name	Description
Q1	2SD636Q,R,S	Transistor	
D1	1SS133	Diode	
R1	—	—	
R2	QRD161J-221	CR	
R3	QRD161J-181	CR	
R4	QRD161J-822	CR	
R5	QRD161J-152	CR	
R6	QRD161J-272	CR	
R10	QRD161J-102	CR	
R11	QRD161J-272	CR	
CN1	PU43351-11	Cap Housing	
CN2	PU49215-2	Cap Housing	
CN3	PU51260-6	Cap Housing	
J1	PU57747-080	Jump Wire	

6.2.14 Take-up reel sensor board assembly [22]

..... PU35632A2

Symbol No.	Part No.	Part Name	Description
PS1	GP2L04B,D	Photo Sensor	
D3	HZS5.6E81	Zener diode	
HD1	PQ41391	Sensor Holder	

6.2.15 Video sub board assembly [24] PU36125A

Symbol No.	Part No.	Part Name	Description
IC101	7VT12	Integrated Circuit	
Q101	2SC2647B,C	Transistor	
D101	OA90	Diode	
D102	OA90	Diode	
D103	MA165 or 1SS133	Diode	
R101	QRD161J-152	CR	
C101	QCB91HJ-121	C Cap	
C102	QCS81HJ-560	C Cap	
C103	QCS81HJ-220	C Cap	
C104	QET61HM-105	E Cap	
C105	QET60JM-476	E Cap	
L101	PU48530-560J	Peaking Coil	
L102	PU48530-101K	Peaking Coil	
CN101	PU49215-107	Cap Housing	

6.2.16 Mode motor board [30]

Symbol No.	Part No.	Part Name	Description
	PU57725-1-2	Motor Board	
C1	QEN81HM-105	NP Cap	
C2	QCF11HP-223	C Cap	
C3	QCF11HP-223	C Cap	
CN1	PU49215-102	Cap Housing	
LU1	PQ41430	Earth Lug	

6.2.17 Power switch/IFR board assembly [31]

..... PU35793A-1

Symbol No.	Part No.	Part Name	Description
D1	SLP-981C-50	LED	
D2	—	—	
D3	MA165 or 1SS133	Diode	
D4	—	—	
D5	MA165 or 1SS133	Diode	
D6	SLP-981C-50	LED	
D7	SLP-981C-50	LED	
D8	SLP-981C-50	LED	
D9	SLP-981C-50	LED	
R1	QRD161J-331	CR	
R2	—	—	
R3	—	—	
R4	QRD161J-104	CR	
R5	QRD161J-152	CR	
R6	QRD161J-223	CR	
R7	—	—	
R8	QRD161J-103	CR	
R9	—	—	
R10	QRD161J-120	CR	
C1	QCY31HK-471	C Cap	
C2	QEK81EM-475	E Cap	
C3	QFJ41HK-273	MY Cap	
C4	QEK81HM-225	E Cap	
C5	—	—	
C6	QEK60JM-476	E Cap	
S1	PU57550	Tact Switch	Power
SC1	PQ30658-2	Shield Case	
SC2	PQ30645-2	Shield Plate	
HD1	PU56940	LED Holder	for D1, D2 D6—D9
	PU56729-2 PU58005A	Wire Clamp IFR Board Ass'y	
The following parts are included in PU58005A.			
IC1	LA7225	Integrated Circuit	
D4	HP-5FR2 or PD48PI or PD481PI	Pin Photo Diode Pin Photo Diode Pin Photo Diode	
R7	QRD162J-104	CR	
R8	—	—	
R9	QRD162J-102	CR	
C5	QET60JM-476	E Cap	
L1	PU57631	Trap Coil	

6.2.18 Display board assembly [32] PU22137A

Symbol No.	Part No.	Part Name	Description
IC301	MN1250BJC	Integrated Circuit	
R301	QRD161J-153	CR	
R302	QRD161J-103	CR	
R303	QRD161J-105	CR	
R304	QRD161J-105	CR	
R305	QRD161J-103	CR	
R306	QRD161J-104	CR	
C301	QCS31HJ-470	C Cap	
C302	QEK61HM-475	E Cap	
CN1	PU51260-11	Cap Housing	
CN2	PU51260-9	Cap Housing	
CN3	PU51260-9	Cap Housing	
FDP1	PU47969	FDP	
HD1	PU35843	Display Holder	
	PU56729	Wire Clamp	

6.2.19 Operation board assembly [33] .. PU11332A2-1

Symbol No.	Part No.	Part Name	Description
Δ IC101	M50115AP	Integrated Circuit	
R201	PU58370	VR	P. SHARPNESS
R202	—	—	—
R203	PU58374	VR	TRACKING
R204	QRD162J-103	CR	
C101	QCS31HJ-221	C Cap	
C102	QCS31HJ-221	C Cap	
S101	PU57551	Tact Switch	STOP
S102	PU57551	Tact Switch	REC
S103	PU57551	Tact Switch	FF
S104	PU57551	Tact Switch	REW
S105	PU57551	Tact Switch	PAUSE
S106	PU57551	Tact Switch	PLAY
S107	PU57551	Tact Switch	EJECT
S201	PU57958	Slide Switch	INPUT SEL
S202	PU57551	Tact Switch	INSTANT REC
S203	PU57550	Tact Switch	CANCEL
S204	PU57551	Tact Switch	DISP MODE
S205	PU57550	Tact Switch	BACK
S206	PU57551	Tact Switch	RESET
S207	PU57550	Tact Switch	NEXT
S208	PU57550	Tact Switch	0
S209	PU57550	Tact Switch	1
S210	PU57550	Tact Switch	2
S211	PU57550	Tact Switch	3
S212	PU57550	Tact Switch	4
S213	PU57550	Tact Switch	5
S214	PU57550	Tact Switch	6
S215	PU57550	Tact Switch	7
S216	PU57550	Tact Switch	8
S217	PU57550	Tact Switch	9
S218	PU57550	Tact Switch	PROG.NO.
S219	PU57550	Tact Switch	CLK.ADJ.
S220	PU52621	Push Switch	TIMER
S221	PU52621	Push Switch	MEMORY
S301	PU57551	Tact Switch	CH UP
S302	PU57551	Tact Switch	CH DOWN
S401	PU57957	Slide Switch	NT-PAL-S
S402	PU57958	Slide Switch	STD-MODI
S403	PU57958	Slide Switch	AUTO-MANU
Δ CF101	PU49487	Ceramic Filter	
SUP401	PU55353	Supporter	
J1	PU58753-13	Flat Wire	
J2	PU58753-16	Flat Wire	
J3	—	—	
J4	PU58753-05	Flat Wire	

6.2.20 Timer board assembly [34] PU11332A1-1

Symbol No.	Part No.	Part Name	Description
Δ IC401	UPD7519H-034-36	Integrated Circuit	
IC402	TL066CP	Integrated Circuit	
IC403	M5278L56	Integrated Circuit	
Q401	—	—	
Q402	2SD636R,S	Transistor	
D201	MA161	Diode	
D202	MA161	Diode	
D203	MA161	Diode	
D204	MA161	Diode	
D205	MA161	Diode	
D206	MA161	Diode	
D303	RD10ES-T1B or HZS10E	Zener Diode Zener Diode	
D401	—	—	
D402	—	—	
D403	11E2	Diode	
D404	11E2	Diode	
D405	MA150 or 1SS133	Diode	
D406	MA150 or 1SS133	Diode	
D407	MA150 or 1SS133	Diode	
D408	—	—	
D409	—	—	
D410	—	—	
D411	—	—	
D412	RD9.1ES-T1B2 or RD9.1EB2	Zener Diode Zener Diode	
D501	1SS131	Diode	
D502	1SS131	Diode	
R307	QRD181J-221	CR	
R308	QRD181J-221	CR	
R401	—	—	
R402	QRD181J-151	CR	
R403	QRD181J-472	CR	
R404	—	—	
R405	QRD181J-682	CR	
R406	QRD181J-104	CR	
R407	QRD181J-333	CR	
R408	QRD181J-394	CR	
R409	QRD181J-474	CR	
R410	QRD181J-684	CR	
R411	QRD181J-333	CR	
R412	QRD181J-564	CR	
R413	QRD181J-224	CR	
R414	QRD181J-273	CR	
R415	QRD181J-472	CR	

Symbol No.	Part No.	Part Name	Description
R416	QRD181J-103	CR	
R417	QRD181J-103	CR	
R418	QRD181J-103	CR	
R419	QRD181J-103	CR	
R420	QRD181J-103	CR	
R421	QRD181J-103	CR	
R422	QRD181J-103	CR	
R423	QRD181J-103	CR	
R424	QRD181J-103	CR	
R425	QRD181J-103	CR	
R426	QRD181J-103	CR	
R427	QRD181J-103	CR	
R428	QRD181J-103	CR	
R429	QRD181J-103	CR	
R430	QRD181J-103	CR	
R431	QRD181J-103	CR	
R432	QRD181J-103	CR	
R433	QRD181J-103	CR	
R434	QRD181J-102	CR	
R435	QRD181J-102	CR	
R436	QRD181J-103	CR	
R437	QRD181J-103	CR	
R438	QRD181J-103	CR	
R439	QRD181J-103	CR	
R440	—	—	
R441	—	—	
R442	—	—	
R443	QRD181J-471	CR	
R444	—	—	
R445	QRD181J-103	CR	
RA401	EXB-P84224M	Resistor Array	
RA402	EXB-P84104M	Resistor Array	
RA403	EXB-P84224M	Resistor Array	
C401	QET61HM-225	E Cap	
C402	PU58288	E Cap	1F/5.5V
C403	QCF31HP-223	C Cap	
C404	QET61HM-225	E Cap	
C405	—	—	
C406	QEK61HM-224	E Cap	
C407	QET61HM-476	E Cap	
C408	QCF31HP-223	C Cap	
C409	QAT3001-011	TR Cap	18pF, CLOCK
C410	QCS31HU-5R0	C Cap	
C411	—	—	
C412	QEK61AM-107	E Cap	
C413	QCF11HP-473	C Cap	
C414	QCF31HP-223	C Cap	
C415	—	—	
C416	QET61HM-474	E Cap	
Δ X401	PU58076	Crystal	VB 120
CN1	—	—	

Symbol No.	Part No.	Part Name	Description
CN2	PU49215-10	Cap Housing	
CN3	PU49215-7	Cap Housing	
CN4	PU49215-7	Cap Housing	
CN9	PU49215-5	Cap Housing	
TP	PU45908-3	Test Pin	TP401,402,404

6.2.21 Presetter board assembly [35] PU35618A

Symbol No.	Part No.	Part Name	Description
S501	PU52621	Push Switch	BT/AFC
S502	PU57550	Tact Switch	SKIP
S503	PU57550	Tact Switch	SEARCH
S504	PU57550	Tact Switch	STORE
S505	PU57550	Tact Switch	CH SET
S506	PU57550	Tact Switch	FINE +
S507	PU57550	Tact Switch	FINE -
CN1	PU49215-7	Cap Housing	

6.2.22 NTSC board assembly [36] PU35886A

Symbol No.	Part No.	Part Name	Description
IC1	PU22077A	C. Mod. PWB Ass'y	VXO
D1	1SS133	Diode	
R1	QRD161J-102	CR	
R2	QRD161J-222	CR	
R3	QRD161J-122	CR	
R4	—	—	
R5	QRD161J-183	CR	
R6	QVZ3531-473	VR	
R7	QRD161J-474	CR	
R8	QRD161J-222	CR	
R9	QRD161J-681	CR	
R10	QRD161J-162	CR	
R11	QRD161J-122	CR	
R12	QRD161J-221	CR	
R13	QRD161J-331	CR	
R14	QRD161J-333	CR	
R15	QRD161J-332	CR	
R16	QRD161J-563	CR	
R17	QRD161J-563	CR	
C1	QET61CM-106	E Cap	
C2	QCT26CH-220	C Cap	
C3	QET61CM-106	E Cap	
C4	QFN31HJ-473	MY Cap	
C5	QEK61HM-474	E Cap	
C6	QER60JM-107	E Cap	
C7	QCF31HP-223	C Cap	
C8	QEK61HM-224	E Cap	
C9	QER61EM-475	E Cap	
C10	QFN31HJ-473	MY Cap	
C11	QET61AM-476	E Cap	
C12	QET61EM-475	E Cap	
C13	QFN31HJ-332	MY Cap	
C14	QET61HM-225	E Cap	
L1	PU48530-101J	Peaking Coil	
L2	PU48530-150J	Peaking Coil	
X1	PU47931-2	Crystal	
LPF1	PU58609	Low Pass Filter	
BPF1	PU58549	Band Pass Filter	
BPF2	PU52648-2	Band Pass Filter	
DL1	PU57400	Comb Filter	
CN1	PU49217-13	Connector	
TP1	PU45908-3	Test Pin	TP1

6.2.23 Remote control board assembly [45]

..... Δ PQ10181-002

Symbol No.	Part No.	Part Name	Description
IC1	M50115AP	Integrated Circuit	
X1(Q1)	2SD636Q,R,S	Transistor	
X2(Q2)	2SC636Q,R,S	Transistor	
X3(Q3)	2SB22Q,R	Transistor	
D1,D2	MA154WA	Diode	
D2,D4	MA154WA	Diode	
D5,D6	MA154WA	Diode	
D7,D8	MA154WA	Diode	
D9,D10	MA154WA	Diode	
D11	MA154WA	Diode	
D12	SE303A	LED	
D13	SE303A	LED	
R1	QRD181J-104	CR	
R2	QRD181J-474	CR	
R3	—	—	
R4	QRD181J-222	CR	
R5	QRD181J-470	CR	
R6	QRD181J-1R2	CR	
R7	QRD181J-471	CR	
R8	QRD181J-1R2	CR	
C1	QCF11HP-101	C Cap	
C2	QCF11HP-101	C Cap	
C3	QET40UM-107	E Cap	
CF1	CSB455E1	Ceramic Filter	
	PQ10181-005	Battery Terminal	Not included in this board ass'y.